

CONSUMERS' RESEARCH BULLETIN

General Bulletin Number



Contents for October 1940

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October 1940

This number is one of 4 *Bulletins* issued during the year by Consumers' Research which are not confidential. This *Bulletin* may be freely discussed with friends. We hope that you will use the opportunity to show them what CR is doing for consumers. The *General Bulletin* is available not only to individuals, but to libraries, schools, and other groups, at \$1 for the subscription year October through June. The next non-confidential issue will be the January 1941 number. Responsibility for all specific statements of fact or opinion at any time made by Consumers' Research lies wholly with the technical director and staff of the organization. Please send notice of any change of address at least one month before it is to take effect, accompanying your notice with statement of your previous address. Duplicate copies cannot be sent to replace those undelivered through subscriber's failure to send advance notice, except at the regular price for orders of such material as back issues. N.B.—For a detailed account of CR's early history, policies, and information as to the answering of special inquiries about commodities, subscribers are urged to read the *Introduction to Consumers' Research*, which is sent to anyone without charge.

Symbols used to indicate sources of data and bases of ratings:

A—recommended on basis of quality

AA—regarded as worthy of highest recommendation

B—intermediate with respect to quality

C—not recommended on basis of quality

cr—information from Consumers' Research's own tests or investigations

1, 2, 3—relative prices, 1 being low, 3 high

39, 40—year in which test was made or information obtained by the staff of Consumers' Research

Off the Editor's Chest

The Consumer's Ancient Enemy—Price-Fixing

EXPERIENCE has shown in many lands and under many conditions that fixing of selling prices of goods, either by government, or by industry acting concertedly, is basically and universally detrimental to the rights of consumers. Until about the beginning of the last decade, it was the general view among economists that attempts at fixing of prices and restriction of supply in foreign countries had shown us so many and such plain examples of the unworkability of such economic expedients that there was little danger of adoption of any price-control schemes in America.

Yet the price-fixing principle was in high favor in the NRA period, and continues under the existing Guffey-Vinson Act; under this law, a commission—the National Bituminous Coal Commission—has been working since 1937 to establish and to enforce by legal action, market prices for coal, designed to prevent the working of competition in coal as to prices and terms of sale. Fortunately, within the past year or two economists have given up their liking for the neat cartel schemes of the NRA epoch, and are pretty generally returning to the view which had been held for several generations in reputable economic circles—with a short interval of the opposite trend—that the rights of ultimate consumers are safe from encroachment only under a system of private enterprise, in which competing manufacturers, dealers, and artisans vie with one another for consumers' custom. We have frequently called attention editorially to the vital necessity of maintaining competitive relationships between manufacturers, dealers, and others in the market, in order to protect the consumer from unjust pricing practices and from attempts to restrict freedom of purchase, the amount and quality of supplies available, etc. (See the editorials in CR's April 1938 and May 1940 *Bulletins*, to mention but two, in which CR has examined this problem.)

The following editorial, from the *St. Louis Post-Dispatch* of February 11, 1939¹, discusses in forthright terms the ac-

tual purposes and effect on consumers of a bill introduced into the Missouri State Legislature under the guise of "stabilizing the dairy industry." (Consumers should note that "stabilizing," in the language of the price-fixers, always means raising prices. "Eliminating the chiselers" has the same general meaning, chiselers being the price-fixers' term for those who still think they are operating and have a right under the federal and state constitutions to continue operating under a system of competitive enterprise.)

Danger Signal for the Consumer

Under the pious pretense of seeking to make the distribution of milk more "efficient and economical," a bill has been introduced in the Legislature to legalize the fixing of both the wholesale and retail prices of milk. The bill is predicated on the assumption that the dairy industry in Missouri is in a state of emergency, when, as a matter of fact, dairymen are in better condition than most other classes of farmers.

The plain purpose of the bill is to do away with competition as a means of determining the price of milk and to allow prices to be set, instead, by a board frankly and openly controlled by the dairy industry itself. The consumer, of course, would be the victim.

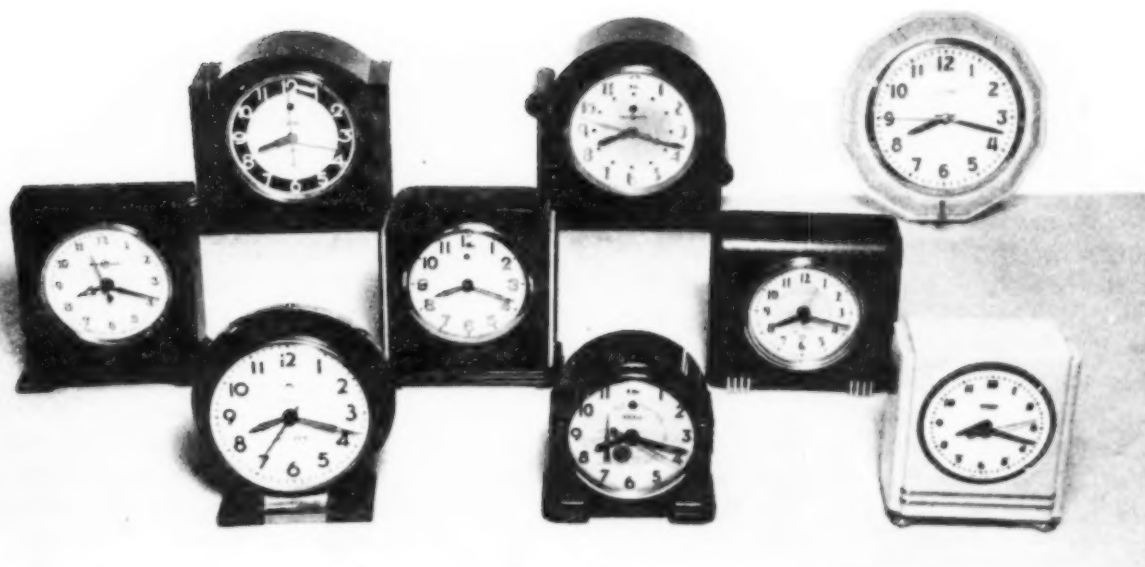
This measure provides that prices would be fixed by a board of five men, one to be nominated by the milk producers' associations, one by the milk distributors' associations, one by the associations of dairymen who are both distributors and producers, one by the dairy breeds associations and the remaining member by the Governor as a representative of the consumers. If it is sound public policy to allow milk prices to be set by a board completely dominated by the dairy industry, it would be equally sound to insist that members of the Interstate Commerce Commission should be named by the railroads, or that members of the Tariff Commission should be nominated by industries desiring protection.

If milk prices are to be fixed by edict, they should be fixed by a neutral board fully insulated against control by the dairying industry. But State price-fixing for milk would even then be wholly gratuitous and harmful. In the large milk-consuming centers, we already have milk marketing boards, operating under the Agricultural Adjustment Administration to set minimum prices to producers. As to retail price-fixing,

(Continued on page 25)

¹ Reprinted by permission from the *St. Louis Post-Dispatch*.

ELECTRIC CLOCKS



Reading from left to right — Top row: Telechron Angelus, No. 6B11; General Electric Samson, No. 41176; Ingraham, MK7. Middle row: Herman Miller, No. 827; New Haven Renfrew, No. OBX; Seth Thomas Echo, No. 3671. Bottom row: Westclox Big Ben; Telechron Croft, No. 31179; Hammond Synchronous Modern Firefly.

ELECTRIC clocks, if well made, furnish accurate time, at no great cost, and without the bother of winding, in homes supplied with practically uninterrupted electric power of regulated (tied-to-exact-time) frequency. Some electric clocks, on the other hand, may run slow (as much as several minutes a day), or, being badly made, they may soon wear out, becoming noisy or stopping completely. A good electric clock, costing perhaps as little as three or four dollars, will keep almost as good time while running on a regulated electric power supply as a much more expensive pendulum clock, because in the electric power house the generators are made to turn at a steady rate. The electric clock runs as evenly as the generators are made to run. The control of the generators, however, though usually good, is not perfect, and the time given by an electric clock in some localities may, therefore, vary from correct time by an interval that may sometimes amount to one-half minute. Of course, if the power has been interrupted by storm or accident, or shut off due to trouble at the power station or along the line, or to a blown fuse or other failure in the

house, then a self-starting type of clock may be in error by almost any amount up to several hours.

Types of Electric Clocks

There are four common types of electric clocks, some more desirable than others, which are as follows:

Type 1. Non-self-starting.

Type 2. Self-starting, with a telltale or indicator to show that clock has been stopped by a current interruption since it was last set.

Type 3. Self-starting, without telltale.

Type 4. Self-starting, with an auxiliary clockwork which keeps the clock running for as long as one-half to two hours during periods of current interruption. These clocks cost two or three times as much as clocks of the other types; probably very few are sold. Because so few of such clocks are to be found in the stores, presumably because of their higher price, none were included in CR's test.

Since electric clocks offered at moderate prices keep accurate time (depending upon the accuracy of control at the electric power station) only if there are no current interruptions, they cannot be solely relied upon in most localities as the primary source of the correct time. For dependable time, one also needs about the house at least one good timepiece, kept regularly wound, of the non-electric type. A spring- or weight-driven clock always has one important advantage; while it may run either fast or slow or irregularly, there is a certain reliability about its deviation. If it is running, one soon learns to know what is the largest error which it is likely to have; and in its time-keeping, it is never likely to lose an hour or so in a short period, as electric clocks unfortunately do, either due to faults of their own or of the supply of electricity.

Clocks of Types 1 and 2 are both satisfactory where current interruptions are infrequent. Type 1, however, is perhaps the better of the two, for the time which it gives can be relied upon (if the clock was set correctly) as long as the clock is running. On the other hand, the time given by Type 2 clocks cannot certainly be relied upon since some clocks of this type (believed to be made exclusively by *Telechron* or under its patents) have, after a period of use, run slow even though the electric current was not interrupted since the clock was correctly set. Time given by Type 3 clocks can never be relied upon because the clock may have lost a small or a considerable amount of time during some current interruption. For this reason, clocks of Type 3 cannot be recommended. Time given by Type 4 clocks can be relied upon only if checked at regular intervals, for during current interruptions the clock keeps time no better than a mechanical clock of the alarm-clock grade, or worse. A better way to build Type 4 clocks would be to equip them with a telltale device of the type used by *Telechron*, or its equivalent, to show whether there has been any current interruption since the clock was set, in order that one may be better able to judge whether to rely upon it for accurate time.

Type 4 is the best type for an alarm clock, for if the current stops for a period, after the alarm was set, the alarm will yet sound at approximately the desired time, while the alarm of a non-self-starting clock will not sound at all, and the alarm of the other self-starting clocks will be late by the interval during which the current was off. There is a particular reason

why alarm clocks are likely to mislead one as to the exact hour. When alterations or major repairs have to be made to central station machine or line equipment, they are often postponed to the small hours of the morning for the very good reason that the fewest people are likely to be inconvenienced in their work and living by a current interruption during that period. It is, however, just the period when an alarm clock set for 5 o'clock the next morning should not be off its job for more than a very few minutes.

Whether or not an electric clock will be a satisfactory purchase depends to a great extent upon the make of the clock. Though electric clocks, in general, are constructed no better than are cheap mechanical clocks, some makes are much better than others. Clocks of the better makes have run as long as ten years without attention of any kind. An especially important point in the design of electric clocks is that their interior mechanism needs to be particularly well protected against the entrance of dust. Few of those tested were well designed in this respect. The two or three watts of electric energy which are dissipated in a clock as heat necessarily set up air currents which carry dust into a clock throughout its whole working life. Another disadvantage of electric clocks is that when repairs are needed, it will be most practical on the whole to return them to the factory, since clock and watch repairmen are not as a rule well set up for making needed repairs—at any rate, at low or moderate cost. CR considers it as a rule undesirable to buy electric striking clocks, for electric strike movements tend to be badly designed and short-lived, with poor tone, and perhaps unevenly timed strokes.

Care of Electric Clocks

All electric clocks (except the *Telechron* and *General Electric*, the motors of which are sealed in oil) should be oiled once a year with a good grade of sewing-machine oil. Ordinary watch and clock oil is too light for the purpose. Any person able to make small mechanical repairs can do the job, and the following procedure is recommended. Disconnect the clock from the power supply; otherwise a serious shock may result. Remove the works from the case by taking out the three or four screws usually found around the outside of the back of the clock. In some cases, one or more of the knobs projecting from the back of the case must also be removed. Try first to unscrew them, turn-

ing in the direction opposite to that used in normal operation. If this fails, and especially if a split sleeve is rigidly attached to the knob, it is usually friction tight on the shaft and may be yanked off with a moderate tug of a pair of pliers. The face and hands are attached to the works and the whole assembly comes out of the case in one piece. Apply to each pivot as much sewing-machine oil as may be taken up on the small end of a toothpick immersed not more than one-fourth inch. If the oil runs away from the pivot-hole and spreads over the plates, wipe it off carefully and apply a smaller quantity. An excess of oil, besides collecting dirt, may actually draw oil away from the pivot, resulting in rapid wear of the clock. Use too little oil rather than too much. Keep oil away from all other parts of the clock, especially the toothed wheels, pinions, and electric wiring. Some attention is required to avoid leaving any smudge on the dial from the fingers. Do not connect the power until the works are safely back in the case. To do so is extremely hazardous.

* * *

Ratings given the following clocks depend upon the movements only, for the same movement with only minor differences usually appears in cases of many different designs. A case is to be chosen to suit one's own taste. Cases of plastic or metal are regarded as safer from a fire hazard standpoint than wood cases. Plastic cases are somewhat safer from the shock-hazard standpoint than metal ones. All the clocks operate on a-c only. At 5 cents per kilowatt-hour for electric power, operating costs of the clocks tested should be approximately 5 to 15 cents per month. With respect to any of the clocks listed as having an alarm, the consumer should note that unless he is in an exceptionally well time-regulated electric distribution area with very rare current interruptions (a condition which does indeed apply in a few sections of very large cities), the electric alarm clock is not to be depended upon for meeting an important engagement, and hence must receive a *B. Intermediate* rating as an alarm clock, though an *A. Recommended* rating for the *Hammond Synchronous Modern Firefly* and *Herman Miller*, No. 827, is appropriate for use of the clocks without respect to the alarm feature. Correct design of an electric alarm clock requires Type 4 construction, with a mechanism capable of carrying on timekeeping with fair accuracy for

a period of current interruption lasting several hours. The movements of the two clocks rated *C. Not Recommended* were of poor construction, plates being excessively thin and soft, making for undue wear of pivot holes. The design of parts was such that proper lubrication was impossible; the clocks lacked rigidity, a defect which does not favor minimal noise in operation. Ratings are cr40.

A. Recommended

Hammond Synchronous Modern Firefly (Hammond Instrument Co., 2915 Northwestern Ave., Chicago) \$4.95. Type 1 (non-self-starting), with alarm. Wattage rating, 2.8. Extremely quiet in operation. Distinctly the best (*Herman Miller*, No. 827, used the same movement) from standpoint of design of the clocks tested, giving dependable long-time service. **3**

Herman Miller, No. 827, Montgomery Ward's No. 45-1207 (*Herman Miller Clock Co.*, Zeeland, Mich.) \$4.95 plus postage. Type 1, with alarm. Wattage rating, 2. Clocks made by the *Herman Miller Clock Co.* use *Hammond* movements. See comments under *Hammond Synchronous*. **3**

B. Intermediate

Telechron Croft, No. 3H79 (*The Warren Telechron Co.*, Ashland, Mass.) \$3.25. Type 2 (self-starting, with telltale). Wattage rating, 2. See comments under *Telechron Angelus*. **2**

General Electric Samson, No. 4H76 (*General Electric Co.*, Ashland, Mass.) \$5.95. Type 2. Wattage rating, 2. Used *Telechron* movement. See comments under *Telechron Angelus*. **3**

Seth Thomas Echo, Cat. No. 3671 (*Seth Thomas Clocks*, Div. *General Time Instruments Corp.*, Thomaston, Conn.) \$5.95. Type 2, with alarm. Wattage rating, 2.4. Well constructed. Telltale occasionally failed to operate when current was interrupted, due to faulty design. **3**

Telechron Angelus, No. 6B11 (*The Warren Telechron Co.*) \$9.95. Type 2. Wattage rating, 2. Striking mechanism (hours and half hours). Motor sealed in oil (desirable). Some *Telechron* clocks have run slow (after a period of use) from a few minutes to several hours a day. This is a rather serious disadvantage since the user may not know the clock is wrong until harm has been done or an appointment missed. The only cure for this type of failure is a new movement from the factory. Striking mechanism of this clock was not well designed, and sound of gong judged unpleasant; strokes not evenly timed. **3**

Westclox Big Ben Chime Alarm, No. 880 (*Westclox*, Div. *General Time Instruments Corp.*, LaSalle, Ill.) \$4.95. Type 2, with alarm. Wattage rating, 2.4. Well constructed. Telltale occasionally failed to operate when current was interrupted, due to faulty design. **3**

C. Not Recommended

Ingraham, MK7 (*The E. Ingraham Co.*, Bristol, Conn.) \$2.95. Type 1. Wattage rating, 2 to 3. Construction, very poor, inferior to the other clocks tested. The clock, indeed, became very noisy after only one week of use. **1**

New Haven Renfrew, No. OBX (*The New Haven Clock Co.*, New Haven, Conn.) \$7.75. Type 3. Wattage rating, 2. Not recommended, both on account of its

C. Not Recommended (contd.)

self-starting, non-telltale type and because of its poor construction. This clock was selected for test from the manufacturer's literature in the belief, occasioned by a normal consumer's reading of the catalog text and illustrations, that the *New Haven Renfrew* was a Type 2 clock. What was thought to be the telltale device of Type 2 clocks was actually merely a revolving disc which closely resembled a telltale in appearance in the catalog.¹

3

C. Not Recommended (contd.)

* * *

All electric clocks of the self-starting type lacking a telltale device to indicate current interruptions (Type 3). The consumer should note that a great many of the commonly sold electric clocks, including many of those sold by Sears-Roebuck and Montgomery Ward, are of this undesirable *Not-Recommended* type.

Cooking Fats and Oils

SOME type of fat is a cooking necessity in every household. In the Americas, Central and Western Europe, Australia, New Zealand, etc., where much bread and pastry are made, lard was the standard domestic cooking fat for many years, while in Italy and other countries where little pastry is eaten and where the swine industry has not been greatly developed, olive oil has long been used. More and more in recent years there has been a tendency to displace old-fashioned staple substances with new factory-prepared, mass-produced foods, and cooking fats have been no exception. In the average home, particularly the city home, the long-established natural fats, such as lard, olive oil, and drippings from baked and fried meats, are pretty much displaced nowadays by liquid and solid fats packaged in convenient tins for the grocery trade. Liquid cottonseed oil first made inroads on the olive oil trade as a cheaper substitute for olive oil both for frying and for salad use. Corn oil also made a place for itself as an olive oil substitute. It was much harder, however, for the vegetable oils to displace the old stand-by, lard, as a shortening. Although it is possible to develop a technique for the successful use of some oils as shortenings, plastic fats are easier to mix evenly into the flour; pastry made with oily shortenings tends to become greasy in feel and appearance. Hence the place of lard as shortening for home use remained secure until the process of hydrogenation was perfected. By this process, liquid oils are treated with hydrogen gas (in the presence of a chemical adjuvant known as a catalyst), and a

white or creamy plastic fat is produced, smooth in texture and resembling lard in appearance. The hydrogenated vegetable oils have practically no flavor or odor, however, and will keep indefinitely at room temperature, due to the removal of the easily-oxidized unsaturated fatty acids which are present in natural fats. Backed by powerful and far-flung advertising campaigns in all the popular women's magazines, these relatively new products have elbowed lard out of many a household refrigerator. The housewife, naturally enough, considered their convenience, their physical appearance and much-advertised purity, and gave little attention to the possibility that something might be lost to the diet when she substituted them for the less attractive and less homogeneous common food fats familiar in her mother's and grandmother's day. Today's homemaker is told that *Spry* is "Triple Creamed for Easy Mixing" and that the "New Sure-Mix *Crisco* gives higher, lighter, tenderer cakes," but rarely, indeed, does she hear about the possible advantages of lard. Nor is the housewife reminded that when a food substance is made free of characteristic flavor and odor and given non-spoiling properties by a refining technique, something of value and nutritional importance is sure to have been taken out of it. The abnormally white, highly purified factory-made oils and fats, especially those derived from non-food sources such as cottonseed, have a fundamental and obvious deficiency in their lack of vitamin and mineral substances (usually associated with color and flavor) that are always

¹ From the consumer's standpoint, the manufacturer or dealer should never leave any possible doubt as to the type of clock mechanism which is being offered. Intelligent consumers want to know; all consumers have a right to such information, presented in standardized form with no possibility of being misunderstood. Catalogs all too often take a great deal of space to elaborate the unimportant, and carefully or ignorantly omit the details the consumer really needs. (This is especially often the case with radio and automotive advertising leaflets and circulars.) This failure to list clearly the type of clock offered was brought to both Sears-Roebuck's and Montgomery Ward's attention some time ago; unfortunately, the latest catalogs of both these firms do not show that any serious attempt has been made to correct this situation. Such statements as "self starting electric" used by Sears, and "self starting electric movement" with the explanation that "self starting electric clocks automatically restart after current interruptions," as used by Montgomery Ward, will cause the average reader to assume that these terms describe a superior or desirable clock mechanism, whereas the opposite is actually the case and the self-starting clock without indicator is the kind that consumers should not buy—certainly not unless they live in a large city where current interruptions of more than a few seconds are very rare.

associated with natural, wholesome foods.

There are a few compounds (mixtures of hydrogenated lard and vegetable oils) on the market, but they are relatively unimportant both as to advertising claims and distribution. Hence, practically the only important choice which the contemporary housewife has to make, when she goes to the store to buy a plastic fat for home use, is whether she will choose lard or hydrogenated vegetable oil.

CR has long been of the opinion that the older, time-tried, natural fats should be given preference over those of more recent, and certainly more sophisticated, origin. Although comparatively little experimental work in the nutritional values of fats has been done, what little reliable work on the subject we have been able to find seems to bear out this opinion.

Fats as Shortenings

So far as physical properties go, the superiority of plain lard for use as a shortening over any of the hydrogenated fats now on the market has been quite thoroughly demonstrated by extensive experimental work. One authority defines a shortening thus: "The best shortening is that material which when baked in a dough gives to the product a minimum breaking strength and a minimum crushing strength." In two series of tests in the experimental work mentioned, the shortening value of hydrogenated cottonseed oil was shown to be about 70% of that of refined lard. Other tests made by a state agricultural college showed the superior shortening value of lard over hydrogenated lard. Lards were found to head the list of plastic fats for use in pastry for superiority in flakiness, flavor, shortening value, and economy. Since the shortening value of the hydrogenated fats and compounds is only about three-fourths that of lard, it is necessary to use more of these fats than of lard. At present prices (lard 10 to 12 cents, and hydrogenated cottonseed oils about 20 cents, per pound) the substitutes are pretty expensive shortenings and the thoughtful housewife may question the advisability of paying 170% more for a given amount of shortening value in factory-made fats, than for the same shortening value in the form of lard.

Nutritional Value

It seems only reasonable to believe that oils made from products which are good for food (peanuts, corn, olives, etc.) should themselves

be suitable for human consumption. On the other hand, it does not seem at all certain that a substance such as cottonseed, generally regarded as an inedible product so far as human beings are concerned, should provide a nutritionally desirable food substance for man.

It was long thought, and CR has mentioned this in previous *Bulletins*, that low melting-point fats were more completely assimilated than fats with high melting points. Recent experiments have apparently shown, however, that although a low melting point may be favorable to complete absorption of a fat, the actual determining factor seems to be the presence of certain fatty acids which occur in various amounts in different fats. These may be either saturated (in which all the valence bonds of the carbon atoms are satisfied) or unsaturated. One of the most important of the latter group is linoleic acid, which some authorities believe has recently been demonstrated to be an essential part of the diet (just as are certain vitamins, A, B₁, and G, for example). Several groups of investigators found that rats fed scientifically purified diets adequately supplied with protein, energy, salts, and vitamins, but lacking fat, grew satisfactorily for a time but soon developed a dietary deficiency disease and died. The disease, manifesting deteriorations of hair and scalp, with other serious involvements, was found to be easily arrested and symptoms disappeared upon the feeding of linoleic acid. Oleic acid, also one of the unsaturated group, and the principal acid in oleo oil, was found ineffective as a cure. (Oleo oil is extracted from beef fat; it is extensively used in making oleomargarine.) These findings have been disputed by other authorities, but so far as can be said at the present time, the experimenters seem to have been on fairly firm ground in drawing their conclusions.

The process of hydrogenation destroys linoleic acid (and other unsaturated fatty acids) to a large degree and thus removes rather certainly valuable food substances from natural fats. One table of analyses showed the linoleic acid content of refined lard as 5 to 14%, and of leaf lard as 4 to 11%, but indicated that hydrogenated lard contained only about 1 to 3%. Liquid cottonseed oil contained about 50% linoleic acid but hydrogenated cottonseed oil only about 13 to 15%. In a series of experiments in which fat was 5%, 30%, and 55% of the diet of rats, the growth induced by refined lard was found slightly superior in each case

to that produced by hydrogenated cottonseed oil, although both fats contained appreciable amounts of linoleic acid; this determination indicated that perhaps other factors present in natural (unmodified) fats than linoleic acid content entered into the promotion of growth. The significance of this is seen to be greater when it is realized that for many people the proper or safe intake of fats is necessarily limited by considerations of digestibility, tendency to overweight, skin troubles, etc. Thus it is plain that with fat consumption necessarily limited for many persons, it is not a matter of indifference whether any or all of that fat is of a type which is poor in nutritionally essential elements. Linoleic acid is probably only one of several such elements.

Many series of tests have been made on the digestibility of various fats, and investigators have found what they consider to be significant differences. In our opinion, the layman may be tempted to give unmerited weight to differences in the digestibility coefficients, which do not measure nutritional wholesomeness or desirability, but only a somewhat unreal laboratory concept. All common foods contain a smaller or larger proportion of indigestible or unutilized elements, and nutritionists regularly advise that everyone's diet should include a considerable proportion of foods containing percentages of indigestible and partly digestible material. By the same reasoning, nutritionists frequently caution against the use of concentrated or "pure" foods, such as sugar or refined starch, which will have a digestibility coefficient of practically 100%. (Such foods are often rated as among the most undesirable that can be consumed, because they are entirely lacking not only in useful roughage and residue elements and diluents, but also in vitamin and mineral substances valuable to the body's processes of growth and food utilization.)

An objection to cottonseed oil which is important to some persons is that it is a rather common cause of allergy. The American Medical Association, in *Accepted Foods*, cautiously states: "Some persons appear to be sensitive to it," while Vaughan, in *Practice of Allergy*, mentions that the incidence of allergy to cottonseed oil in several groups of patients was found to range from 0.6% to 5.3%. It has been noted, moreover, that allergy to cottonseed oil is apt to produce very severe symptoms and to be difficult to treat.

* * *

Under the existing definition for lard, all fats produced from federally inspected hog carcasses may be called lard, provided they are edible and noninjurious. Although many manufacturers use only high-grade raw materials, others use inferior materials from which lard of poor taste and keeping qualities is produced. Beginning November 1, 1940, the following new U.S. Department of Agriculture definitions will be in effect.

Lard: the fat rendered from fresh, clean, sound, fatty tissues from hogs in good health at the time of slaughter, with or without lard stearin or hardened fat. The tissues do not include bones, detached skin, head fat, ears, tails, organs, windpipes, large blood vessels, scrap fat, skimmings, settlings, pressings, and the like, and are reasonably free from muscle tissue and blood.

Rendered Pork Fat: the fat, other than lard, rendered from clean, sound carcasses, parts of carcasses, or edible organs from hogs in good health at the time of slaughter, except that stomachs, tails, bones from the head and bones from cured or cooked pork are not included. The tissues rendered are usually fresh, but may be cured, cooked, or otherwise prepared and may contain some meat food products. Rendered pork fat may be hardened by the use of lard stearin or hardened lard, or by rendered pork fat stearin or hardened rendered pork fat.

Containers of fat from swine will have to be marked plainly "lard" or "rendered pork fat" and consumers should examine them carefully before buying. The quality of rendered pork fat seems rather dubious when the possibilities inherent in some of the above provisions are considered.

* * *

The lards usually available are kettle-rendered leaf lard, kettle-rendered lard, and prime steam or steam-rendered lard. *Kettle-rendered leaf lard* comes from the "leaves" of fat in the hog's abdomen, and is considered by many superior to other types. *Kettle-rendered lard* is made from a combination of leaf and back fats. Both kinds of lard, as their names imply, are rendered in steam-jacketed kettles. *Prime steam lard* is made from the fats removed during killing and cutting. Probably 80% of commercially sold lard is of this type. It is normally lighter in color than kettle-rendered lard and, if bleached further, is known as *refined lard*. Too much bleaching is considered undesirable; the comment already made with respect to the undesirability of refining of fats and other foods is apropos. *Neutral lard* is usually made from the "leaves" rendered at low temperature. It has almost no flavor or odor. Very little of this lard is available to the household consumer as

it is nearly all used by the oleomargarine industry, perhaps on account of its very lack of characteristic flavor and odor.

Peanut oil has been found to have both satisfactory growth-promoting value and a fairly high digestibility coefficient, and would seem a logical substitute for olive oil, if available and if the taste is satisfactory. There are practically no data as to the growth-promoting quality and digestibility coefficient of corn oil, but so far as is known, it should also prove satisfactory in these respects. Vaughan mentions both corn and peanut oils as satisfactory salad oils and does not refer to allergic reactions to either one of them.

Under the new F. D. & C. Act, makers of cooking fats should have been required to state the *kinds of oil or fat* and *the amount and processing of each*, used in their products, in order that consumers could know what they are buying. However, no more useful or revealing information appears on the labels of *Crisco*, *Spry*, etc., now than in former years.

For ordinary frying, a can in the refrigerator into which all sorts of home-rendered fats are poured, will save quite a considerable amount on the cooking-fat bill.¹ The special flavors of

poultry and bacon fat are particularly pleasing to many people, and it is safe to assume that a fat or fat mixture with a pleasing flavor contains food elements which will make it more desirable than a refined, flavorless fat. Many housewives perhaps need to be reminded of the availability and desirability of fats which are already in the home and which would be wasted if not used in cooking.

A. Recommended

Lard, plain, *not hydrogenated*, not too white—preferably purchased from some clean, well-observed farm kitchen. Olive oil. Shown by long experience to be a wholesome fat.

B. Intermediate

Lard, hydrogenated. Inferior to plain lard, nutritionally and as a shortening.

Mazola (Corn Products Refining Co., N.Y.C.) Corn oil. Judged to be a satisfactory cooking oil.

C. Not Recommended

Hy-Score Olorine "A pure vegetable product." Found to contain mineral oil. g38

Sun-drop "Pure Virgin Peanut Oil." Was cottonseed oil in part. sg38

* * *

CR also considers as relatively undesirable all hydrogenated vegetable fats (such as *Crisco*, *Spry*, *Fry-Bake*, etc.) which are not labeled to show what oils they contain and in what proportions and how processed.

CR Material Available for Preparation of School and College Papers and Theses

AT THOSE times of the year when many books and articles, theses and lengthy college papers are being written on subjects related to consumer problems, CR is regularly in receipt of letters from students and teachers requesting help in preparing them. Consumers' Research makes it a point to give all the co-operation which its time and facilities permit in furnishing suggestions of content, important references that might be missed, and source material for such papers, whenever the author or teacher concerned has set forth the project in sufficiently clear and detailed form that the scope and trend of the research or study can be clearly understood, and CR's staff are thereby enabled to offer an effective selection of material. Naturally, in order that we may help to the best advantage future authors and students carrying on similar studies, we should have on file copies of the finished theme, article, or thesis, and we especially ask the cooperation of all students and teachers in seeing that

arrangements are made to supply to CR such a finished copy, when the work is done. Agreement to supply a copy of the finished result should be a part of the first letter requesting the information, source material, *Bulletins*, tear sheets, or other assistance.

CR has in its files a very valuable accumulation of materials on consumption problems as discussed and taught in schools and colleges, and such material will be of great value to educators, candidates for doctorates in economics and education, and all those who in future years will wish to undertake historical studies of the consumer movement, its beginnings in the schools (very soon after the appearance of *Your Money's Worth*, and about the time Consumers' Research was organized), the widening of scope and growth in importance of consumer studies in educational institutions of all types and at various student age levels. Other important aspects of research into consumers' problems include related work in science, technology, "industrial arts," and reports of tests on goods and on methods of testing goods bought by consumers.

¹ A question is occasionally raised as to the flavor desirability of foods that are deep-fat-fried in hydrogenated cottonseed oil, in comparison with those fried in lard. The data so far available on this question are extremely limited and seem to us of more interest to commercial or factory users of the fat than to home users.

Laxatives and Bowel Consciousness - A Clinical Study

by Manfred Kraemer, M. D., F. A. C. P., of Newark, New Jersey¹

THE unrestricted and indiscriminate sale and use of laxatives has resulted in purgative addiction by a large proportion of the American public. In order to obtain some facts in regard to the prevalent use of cathartics and the relation of constipation to the use of laxative drugs, a detailed laxative history was taken along with the history of bowel habits in a series of 300 consecutive patients in private practice. . . .

Nothing in this paper must be construed to refer to constipation due to organic obstruction (stricture or tumor), or constipation resulting from spinal cord disease.

. . . We have concluded that constipation as a disease entity does not exist; that constipation is a symptom arising in a person's mind. Every patient had a different conception of constipation. The use of laxatives is evidence of bowel consciousness, not of constipation.

. . . Only 2 patients [of the 300 patients studied] declared that they had never taken a physic. Of the 300 cases, 36 females and 43 males took laxatives less frequently than 4 times a year (Table III). These 79 patients were excluded from the statistics regarding habit formation, for patients taking physics less often than once in 3 months can scarcely be considered bowel conscious. The incidence, therefore, of laxative addiction for the entire group was 73%. The proportion in males and females was exactly the same. This is in contradiction of the general opinion that more women take laxatives than men. Since laxative addiction and bowel consciousness go hand-in-hand, we can conclude that over 70% of our patients are sufficiently bowel conscious to take a laxative more frequently than once every 3 months. Further, in regard to the frequency of taking laxatives (Table III): of the 300 patients, 71 or 21% took laxatives daily. 161 patients or

53% of the whole group took laxatives weekly or more often.

We thought it of interest to determine how many different laxatives were taken regularly.

95 or 43% of the group took only one type or brand of laxative. 72 or 32% took two brands of laxatives regularly, and two of the group took more than 8 different laxatives. A frequent reply to the question "How many laxatives do you take?" is, "I take everything I hear of."

While the common age of onset of the laxative habit for both males and females was between the ages of 20 and 30, there is a greater disposition on the part of girls than of boys to form the habit

under 20. This is probably due to the misconception that proper menstrual activity can persist only if associated with a daily copious bowel excretion.

As to the years of duration of the laxative habit (Table VI): 113 of the patients had been addicted for less than five years, but 108 had been taking laxatives from 6 to over 40 years. There was no significant sex variation in the duration of the habit.

. . . The most frequent answer to the question "Why do you take laxatives?" was, "My bowels can't move without one," and the next most frequent answer was, "When I get a pain in my stomach." Curiously enough 6 patients took laxatives for diarrhea, and 9 merely because they thought "they were good for you," and 2 on "general principles."

.
The main purpose in studying these patients was to determine on whom to place the blame for the creation of bowel consciousness. Four groups are directly responsible: advertisers of laxatives, the medical profession, parents, and friends. In the last group are included husband

¹ *The American Journal of Digestive Diseases*, March 1938, Vol. V, No. 1. Excerpts reprinted by special permission of the author and of the Journal.

It has been reliably estimated that about 70 percent of Americans are habitual users of laxative drugs, and that 90 percent suffer from constipation at one time or another. That being the case, we believe that the excerpts which are here reprinted, by permission, from an article appearing in the March 1938 issue of The American Journal of Digestive Diseases will be of interest and possible help to our readers. Some may indeed want to read the original article in its entirety, as it contained numerous tables (by reasons of space limitations, we are unable to reproduce them all here) showing the age of onset of the laxative habit, the years of duration, the frequency of dosage, the names of laxatives most commonly taken and the patients' reasons for taking them.

or wife. It is difficult to accurately determine how much the other [last] three groups are influenced by advertising. We tried as best we could in each case to place the blame where it belonged. The advertisers (Table IX) were responsible as often as the other three groups combined. 21

Table III

Frequency of Taking Laxatives	Number of Patients	Less Than Once Every 3 Months	
Daily	71	Males	43
Alternate Days	24	Females	36
Twice Weekly	23	Total	79
Weekly	43		
Twice Monthly	10		
Monthly	36		
Every 3 Months	14		
Total	221		

of our patients traced the origin of their laxative habit to their parents. Mothers often insist that the children take a physic once a week "to get a good cleaning out." Several patients have told a similar story: "On Saturday night after our bath we were all lined up and given a tablespoonful of castor oil."

A second instance where parents can be blamed for starting the laxative curse is during puberty. At this time many girls look below par for reasons we cannot now go into....Mother then prescribes her favorite physic and daughter becomes bowel conscious and the laxative habit is started.

... In the presence of common colds, grippe, acute "stomach upset," or gastro-enteritis, the parent's first impulse is to administer a purge. Not only is this "cleaning out" followed by constipation for which the child will often take another cathartic in a few days, but it also associates some malific influence in the child's mind between the fecal contents and these diseases. It is well known that colds, grippe, and acute gastro-intestinal disturbances are self-limiting and that cathartics are of no particular benefit.

... I confess that I have rarely, if ever, witnessed any organic change result from the use of laxatives and many may ask "Why bother about

the subject if laxatives never hurt anybody." My answer is that, as physicians, we must not only cure organic disease, but must help our patients over mental difficulties. The life of the average cathartic habitué is often made miserable and is as lacking in happiness as that of many sufferers from chronic organic disease.

... One month's accumulation of laxative advertising arriving by mail [to a physician] and clipped from scientific journals fills a legal-sized folder. Try as he might, the physician cannot escape the constant bombardment which draws his attention to "Habit Time," "Spastic Colitis," "The most prevalent ailment," and the superiority of "Miscibility," or "The physiological restoration of bowel rhythm."

Lastly, we must touch on the influence of

advertising on the establishment of bowel consciousness. 112 cases were traced directly to this source. The drug houses have taken advantage of the public's newly aroused health consciousness. Commercial success accrues to any manufacturer who can, by means of advertising, create sufficient bowel consciousness in the

public mind to sell a person only a few doses of

Table VI

Years Duration Laxative Habit	Males	Females	Total
0-5	70	43	113
6-10	21	17	38
11-15	9	13	22
16-20	11	16	27
21-25	3	3	6
26-30	1	3	4
31-35		1	1
36-40	1	3	4
Over 40	2	4	6
	118	103	221

Table IX

Etiological Factors Stimulating Bowel Consciousness	Patients
1. Advertising	112
2. Physician	72
3. Parents	21
4. Friends	16
Total	221

his product. Since laxatives are usually habit forming, repeat orders pile up and a business is established.

Misbranding laxatives as candy, and advertising to mothers to give regular doses of this or that purge assures not only one single sale, but continuous business even after the advertising stops. Some of our patients are taking "Liver Pills" and other proprietary preparations which have not been advertised either to physicians or to the public for twenty or more years.

Conclusions

A program for the prevention of bowel consciousness on the part of the American public must be aimed at the source of this condition. First, parents must be educated against the use of laxatives and must be cautioned against overemphasizing bowel function. Second, physicians must be more guarded in prescribing laxatives. They must show less concern regarding the functional activity of the colon. They must treat constipation by withdrawing

laxatives and not by prescribing additional ones. Third, there must be a legal curb to the advertising of laxatives in the press, and the radio, and by mail.

Imaginary diseases and symptoms are real to the patient. Patients' lives have been made miserable because of constant bowel consciousness and the constant use of laxatives. With 70% of our public addicted to laxation by drugs or enemas, it is high time that something be done about it.

CR GLAD TO RECEIVE AND FILE MANUFACTURERS' CATALOGS

WE will be glad to receive and file up-to-date catalogs in all fields of consumers' goods and will appreciate having subscribers send them in when convenient, particularly catalogs of goods which they would like CR to test. Catalogs giving details, specifications, prices, etc., on all sorts of articles in common use by ultimate consumers, from electrical refrigerators to children's shoes (particularly widely sold brands), are especially valuable as additions to our already large classified catalog reference files. However, if you suggest to a

manufacturer friend that he send copies of his catalog literature for our files, please explain that he should not accompany the catalog by a salesman or other representative assigned to make a courtesy or sales call upon Consumers' Research. It will not be possible for us to stop urgent work on *Bulletins* to discuss the contents of catalog material or to receive orally a particular manufacturer's claims for the special advantages and characteristics of his product. All such information, of course, should be in writing or in print for future reference.

This Class-Ring Business

YEAR after year most of the members of the Junior classes in innumerable high schools throughout the country choose their class rings, order them, wait in suspense for weeks until they come, pay for them, wear them through their Senior year—possibly a few years longer—and forget them. Occasionally some boy's ring finds longer service on some girl's finger, but on the whole, the life-in-use of high school rings is very short and they are all too soon lost, discarded, or forgotten.

It must be agreed that the sentiment behind the desire to wear some sort of a school or class symbol is a fine thing, and a wish to exhibit jewelry advertising their connection with the school is only natural among our school boys and girls. However, sentiment at \$10 a throw may seem to many rather overpriced when the same thing might be acquired for around \$4 or \$5. As a nearby school has been able to buy rings at this lower price, we are pretty well convinced that there is some way around the problem of too much money paid for school class jewelry.

The procedure followed in a local school is probably common to many other schools, though it may be varied slightly. The class appoints a committee to look into the problem of class rings, procure catalogs, and pick out three or four possible designs. Those selected are then voted on by the class and the final choice goes to the design which gets the most votes. The rings come in different sizes at prices which may vary from \$7.50 for the smaller ones to \$10 or more for the larger sizes and boys' rings.

One wonders where so much money for the purchases can come from in some cases, for children whose families spend part of the time on relief and who don't have proper or warm clothing, all do seem to turn up with their class rings. As one Western educator put it: "Kids from the fields and the range, many of them not more than three months ahead of starvation, are easily convinced that next to God and the flag a class ring is the most important thing in their lives."

Time was when any group of high school pupils was proud to wear \$2.50 class pins.

These are still shown in catalogs but apparently, at the present juncture in school jewelry styles, have no appeal for the majority of boys and girls. It is hard to say why this is so; perhaps other pins are so numerous that a class pin is just one too many.

But we have a feeling that the silver-tongued jewelry salesman has put over on teacher and pupils a shrewd bit of "trading-up." A class may intend to be economical and buy class pins, but by the time they hear that all the other classes in all the other nearby towns are buying rings, their resolutions to be practical and sensible vanish and the committee picks rings, and expensive ones at that.

In the opinion of one expert in this field, school jewelry can be divided into four grades.

FIRST GRADE: Should be made from 14K or 10K stock of reasonable weight or thickness; enamel, if any, should be finely glazed; stones, firmly set; die work, fine and sharp; planes, bevels, and high lights, neatly polished.

SECOND GRADE: Similar to first grade except stock should be of sterling silver (plain or plated with gold or rhodium) or gold filled (stamped one-tenth, one-twelfth, one-twentieth) or rolled gold (less than one-twentieth). Such markings on gold jewelry indicate the proportion (by weight) of the gold alloy coating (of karat stamped) to the weight of the entire metal in the article.

THIRD GRADE: Stock of oroid or "gilding metal" finished in bronze or a fair deposit of gold, silver, or rhodium; enamel, if any, should be of good quality; some burnishing with bevels and edges just fairly smooth; fairly sharp die work.

FOURTH GRADE: Similar to costume or novelty jewelry. It has only a scant deposit of gold, coated with lacquer to preserve it. Imitations of higher grades, produced by sand-casting, or poorly executed stampings also fall into this class.

Misrepresentation is not uncommon, for although the commercial standards accepted by the industry specifically state that "no article having a gold coating of less than 10K shall have applied to it any quality mark," rings, etc., are sold which do not meet this requirement. There is, for example, the Federal Trade Commission complaint of September 1938 against the Josten Mfg. Co., Owatonna, Minn., who claimed to be the largest producer of fine

class rings. Allegedly, this company had represented its *Duratone* rings as solid 10-karat gold, when actually they were composed in part of base metal; it had also represented certain of its rings as solid 10-karat gold when actually they were not solid but partly hollow; and it had stamped rings 10K which were not solid 10-karat gold. Bastian Brothers Co., of Rochester, N.Y., a frequent advertiser of this type of jewelry in the popular magazines, recently signed a stipulation with the F.T.C. to discontinue representing jewelry as gold if it has less than 10K gold content.

The gold content of jewelry which does not carry the karat mark, no matter what the claims made for it, will probably be found to be too small to make the article of any permanent value, or of value as "old gold." Anyone paying good-jewelry prices for jewelry without a quality (karat) mark, is almost surely not getting what he pays for. This will also be found true of "silver" jewelry with no quality or sterling mark.

Preliminary investigation by CR indicates that as rings are made and sold to most schools today, the prices charged for rings of the better grade are probably not excessive. Plants making scholastic jewelry need more departments than plants making regular jewelry because they have to handle many relatively small orders in many different designs. The individual sizing of rings, engraving them with the proper initials, packaging, and distribution—all make sizable items of expense. If the local jeweler handles the transaction, he, of course, must receive compensation for his time. Gratuities given by the salesman to the jeweler and possibly the school administration add small but nevertheless aggravating and unjustifiable amounts to the purchase price.

A metal finishing consultant with whom CR corresponded offers the following suggestions for obtaining good rings at possibly lower prices. When rings are made, a hob is first cut with the chosen design. This is pressed into a steel block which after hardening becomes the die and is used to stamp out the rings. The hob itself is a short cylindrical piece of steel with a raised design at one end. Our jeweler consultant suggests that the authorities of a given school choose a permanent design, and have a hob cut for it. The school would hold the hob and ask for bids each year from various manufacturers, on different grades of rings with the same design. The maker offering the lowest

bid would make up his own die from the school's hob to fit his own presses or hammers. The competition should certainly make for lower prices and the design would be used by only one school, year after year, instead of, as is now the case, being used by a number of classes in different schools. The smart salesman, however, may have no difficulty in dissuading the school from procuring its own hob, particularly if the school emblem includes the date, for he would point out that the hob would be only good for one year and hence would not pay for itself. This, however, is not true providing that in making the hob a blank space is left for the class year. Then when the die is sunk, the year is engraved as an additional operation in the die block before it is hardened. On this account, because from year to year a change of class numerals must be made, and the fact that different makers need dies of different forms, the die itself would be of little value to the school, as it could only be used for one year's rings.

Having the hob cut might present a problem in some localities, but the classified telephone directory of the larger cities, under Engravers, Steel [or Die Makers], might be a help in locating a competent person. The magazine *The Jewelers' Circular-Keystone*, 239 W. 39 St., N.Y.C., might be willing to furnish information as to die makers who are competent, and specialists in the jewelry field. CR would be interested in hearing about the results from any schools that decide to be independent and try out the suggestions here made.

Of course, there is still the obvious solution of an expensive problem—to give up class rings altogether and substitute for them a simpler and cheaper kind of emblem. One high school principal has suggested that students go back to class pins, or contribute to produce a class motion picture. Perhaps some of our interested subscribers will have some good suggestions on the subject. We would be glad to consider them and report on any that seem to be of general interest.

A Report on Children's Shoes

PROPER shape and fit are the most important factors to consider when buying children's shoes—more important even than when buying adults' shoes, because children's feet are more easily harmed, and deformed. The growth and bone-hardening process of the feet continues to the age of twenty years or more. Shoes of the wrong size or improper shape not only produce discomfort and unattractive and unhealthful defects of posture, but may also cause permanent foot ailments, such as bunions, calluses, corns, ingrowing toenails, weak arches, and hammertoes. Especially in shoes for young persons and children, therefore, workmanship, construction, and material of a shoe, though important, must be considered secondary to shape and fit.

Normal feet when placed together touch at the heels and also from the big joints of the big toes to the end of these toes. Hence, the inner sides of properly made shoes lie practically along a straight line. In children's shoes, there should be a space of at least $\frac{1}{2}$ inch (varying with age and rate of growth) in length beyond the toes, and the toe should be broadly rounded and not too low. Toe height should be sufficient to give plenty of room for the toes to move in any direction. The big joint of the big toe should come just at the point where the sole

line begins to turn inwards on the inside edge of the foot near the instep. (See Fig. 1.)

Shoes should fit rather snugly from the back of the heel to the ball of the foot, but loosely from the ball to the end of the toes. Since children's feet grow rapidly and at a varying rate, careful watch should be kept that they don't become cramped by the shoes before the shoes are outworn.

Shoes, especially for children, should not be stiff; both soles and uppers should be as flexible as possible, but the sole should be of full thickness leather for proper wear and protection of the feet. An arch supporter shoe or other corrective shoe should not be worn except when and as advised by an orthopedist. Such shoes may do definite harm when used improperly or unnecessarily. It is no more advisable for all persons to use arch supporter shoes than it is for them to use eyeglasses or crutches.

Heels should be broad and low and, to protect the ankle from harm or sprain, should be corrected as soon as they become run-over in use. With young children, spring heels (heel formed by bending or springing the outsole over a thickness of leather between it and the under sole) with a beveled rather than square front edge are best in that they are less likely to cause tripping. Rubber heels are desirable because

A PERSONALLY CONDUCTED TOUR OF CR

PEOPLE say we are not cordial about encouraging visitors. Frankly, the technicians would rather *carry on their tests* of commodities which are scheduled (often for months ahead) than to take time out for *explaining* these tests to individual visitors. Besides, taking a visitor through the laboratory often disrupts the testing schedule and delays getting a particular report ready for 60,000 other subscribers who are waiting for their *Bulletin* and expecting to receive it on time, fully and carefully edited and checked.

Instead of inviting you all to come to see us, we are going to take you on a personally conducted tour and give you pictures of some of the things which you might see if you were here in person.



SINCE Consumers' Research is located in the country about a mile and a half from town, you arrive by car and come to the entrance of the office building (above) to register. Then you are taken over to the new laboratory (seen in picture at left) just across the brook.

Stepping inside the main floor of the new laboratory, you would, if you are not a mechanical or electrical expert, be somewhat bewildered by the numerous complex devices and pieces of apparatus, at least until you were taken around and had each one explained to you.

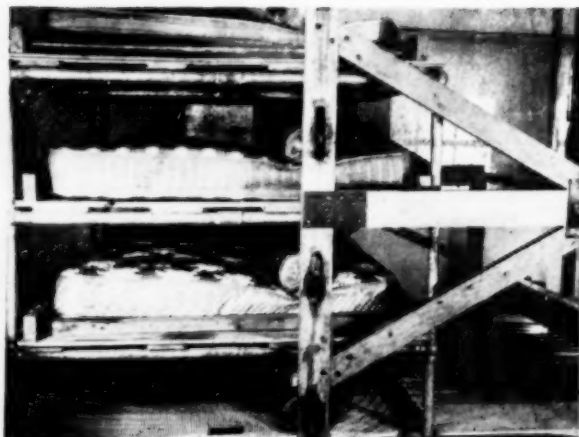
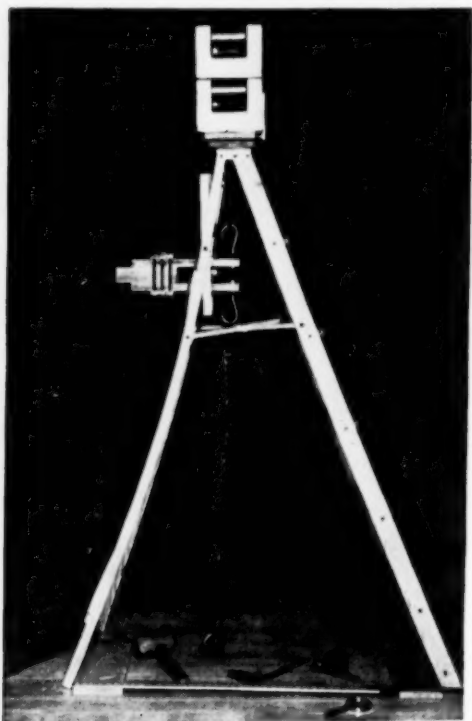
FIRST of all, we see (below) two laboratory technicians checking and code-marking canned goods preparatory to sending



them to the government grading-station to be tested. The government grader will determine whether in each case the canned corn, canned peas, canned peaches, or canned pears are government Grade A, B, or C. First the labels are carefully removed and then a number painted on the can to identify it. The record is carefully entered and double checked so that there is no chance of error in crediting the subsequent rating to the proper brand.

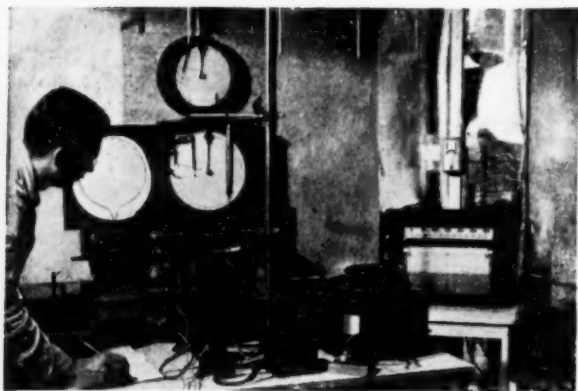


HERE mattresses are being tested. The mattresses are classed as to softness, by actual measurement under a distributed load, and are examined for details of workmanship and design. Then follows a long wearing test with a rolling load weighing about 200 pounds (moving back and forth on each mattress) which traverses a part of the mattress for 50,000 or more times. In this way the short-lived, poorly constructed mattress is distinguished in a few weeks from the mattress of careful, strong, and sturdy construction.



IN another part of the laboratory, stepladders are being tested for conformity with various technical specifications to determine their rigidity, solidity and strength of construction, general workmanship, suitability of the wood, and the methods of framing used.

AFTER observing these tests in progress, we move downstairs to the basement for a look at the constant-temperature-constant-humidity chamber. When this picture was taken, a test of electric motors was in progress and the motors were stored for a time in a high-humidity atmosphere in this chamber in order to locate any electrical defects developed by exposure to moist air. (Electrical appliances often do show a surprising sensitiveness to damp atmosphere.) Another important use for this chamber is for tests of electric refrigerators where constant temperature must be maintained to determine operating costs for electricity used, temperatures inside the food chamber, etc., at various room temperatures likely to occur in the housewife's kitchen. The chamber is also important in the testing of textiles, for they must be held for a time at constant humidity before they are subjected to test for tensile and bursting strengths, etc., since the characteristics of textile fibers vary quite decidedly with the humidity of the atmosphere.



Show Your Friends

Won't you pass on these photographs to friends who may be interested, with a view to subscribing? The new laboratory and its greatly expanded facilities are due largely to subscribers who have told friends about the work and shown them how helpful the information in Consumers' Research Bulletins can be in supplying consumers with practical, useful advice on everyone's buying problems.

For New Subscribers

Consumers' Research, Inc., Washington, N.J.

☐ I enclose \$3 (Canada and foreign \$3.50) for one year's subscription to the Consumers' Research Bulletin (which includes Annual Cumulative Bulletin number and monthly Bulletin numbers—except during July and August).

It is understood that my handling of any CR material which is marked "The analyses of commodities, products, or merchandise appearing in this issue of the CR Bulletin are for the sole information of subscribers" will be in accordance with that direction.

Name.....
(Please write in longhand)

Street.....

City..... State.....

My profession or business is.....

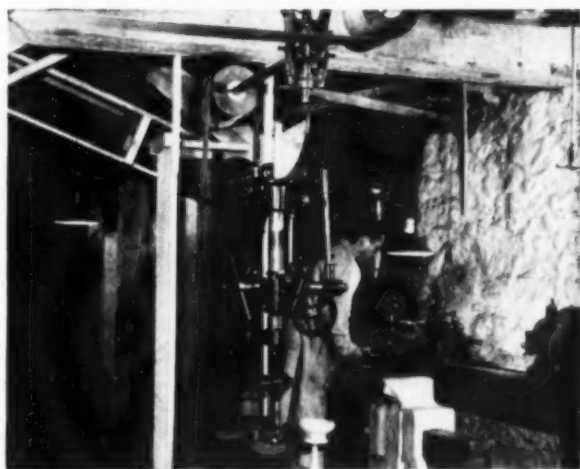
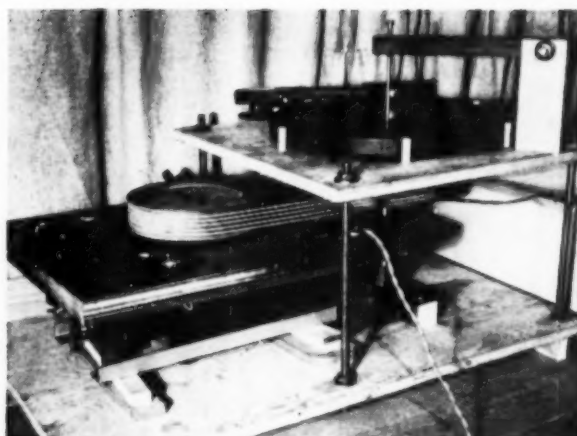
CR-10-40



THROUGH the connecting underground tunnel we pass to the radio testing laboratory which is located in the former main laboratory, an old building, originally used as an iron foundry back in 1829. Notice that the walls have been draped with a heavy material to deaden reflections of the sound. Here much of CR's experimental and testing work on high-fidelity radio sets and radio-phonographs, phonograph pickups, and needles is carried on. The radio laboratory is one of the most interesting spots for visitors. Few people realize how enjoyable high-fidelity reproduction of a good phonograph record or a good radio orchestra can be until they have heard one or the other on CR's experimental set specially built and adjusted for fine reproduction.

COMING downstairs from the radio laboratory, we give you a brief glimpse of the photographic room which is especially arranged for quick and accurate processing of photo-negatives, enlarging, and printing. The apparatus shown is for taking miniature photoprints of documents and letters. It was first devised by Consumers' Research in 1933 and constantly improved. The page to be copied is taken on 35mm film.

ACROSS the way is the machine shop where many of the testing devices used in CR's laboratories are built according to designs laid out by CR's engineers and consultants.



Show Your Friends

THIS, in brief, is what you would see on a personally conducted tour. We hope that this bird's-eye view of CR's plant and equipment will help you to interest still more friends to subscribe. It will show them what CR can do to take the guesswork out of their buying for the home and for their personal needs. Please pass on the blanks.

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Name.....
(Please write in longhand)

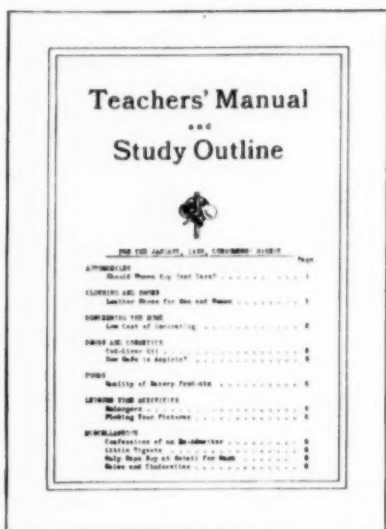
Street.....

City..... State.....

My profession or business is.....

CR-10-40

This Page Is For Teachers



This Outline is sent *free* to all teacher-subscribers and with all school orders.

Consumers' Digest has no commercial affiliations whatsoever. Its purpose is to make available information of interest and value to consumers to assist them in knowing how, what, and which to buy to get their money's worth. There are recommendations of specific products by brand name as well as articles on current consumer problems. Articles which have appeared recently include:

Are We Guinea Pigs for "Glass" Clothing?
Guides for the Deafened
So You're Buying a Fur Coat
Is Your Antifreeze Safe?
Phonograph Records
Canned and Frozen Peas
"Short Weight"
A Good Greasy Cream
Care of Silk Stockings
Electric Water Heaters
Ratings of 188 Motion Pictures

If you are a teacher of a consumer course, here is help for you. If you are not a teacher or not a teacher of a consumer course, show this page to one who is. He will thank you.

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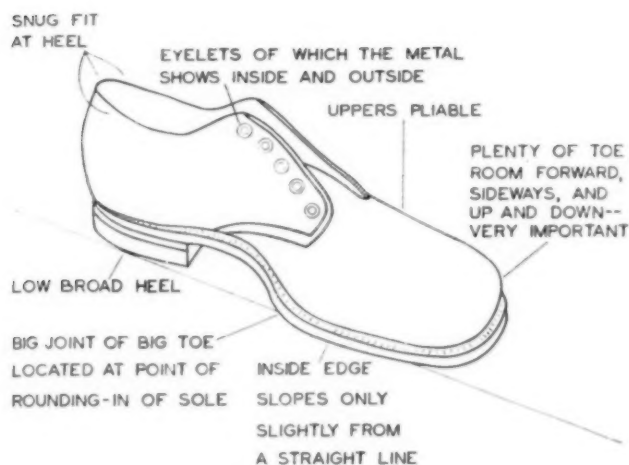


Fig. 1. Desirable features of a child's shoe.

they lessen jarring and are quieter, but they are less protective of weak arches than leather heels and are more likely to come off, sometimes under conditions which may cause a sprain or other harm to the foot or the person.

Rubber soles are generally apt to lose shape and strength more rapidly than good leather ones and are particularly undesirable for individuals with weak arches or those who are overweight. Uppers should usually be of calfskin. There seems some ground for a belief that white leathers and kid are often too soft and lose strength and shape rapidly. Patent leather is non-porous and undesirable for children, especially at play.

Examine the inside of the shoes to see that seams are not rough and that there are no ridges anywhere which can abrade or press into the feet. The lining of the heel should be smooth leather and seamless; a vertical seam or ridge in the middle of the heel is likely to cause blisters or calluses. The toe lining should be a good grade of smooth canvas, waterproofed to resist perspiration. Counters and heel pads should be made of leather. As to the lacing, eyes which are metal inside and out are the easiest for children to lace.

Where rapid wear of soles is a problem, a method to increase the useful life is to apply at intervals to the soles liberal amounts of thin varnish, such as *Wipe-On* varnish, obtainable in bottles at many 10-20-cent variety stores.

The children's shoes in CR's tests were all low shoes (Oxfords). They were examined by a well-qualified orthopedist for shape and construction. In the laboratory they were dissected and various parts subjected to tests to

determine their quality and serviceability. The soles were tested for resistance to abrasion, to water absorption, and for resilience. The upper leather was tested for breaking strength, stretch, resistance to tearing and to scuffing, resistance to tearing of stitches, and break (the number of creases per unit of length of the finished side of the leather when wrapped around a rod $\frac{1}{8}$ inch in diameter [Fig. 2]). The abrasion tests were made on a Sigler-Holt apparatus and the abrasion indices were determined for two conditions, the first corresponding to a small amount of wear ("shallow-test"), the second to a large amount (deeper abrasion). This was done for the reason that wear resistance of leather changes as the wearing surface goes farther into the material. The scuffing tests were made on a machine especially designed by CR for the purpose and used in the shoe tests reported in the October 1938 *Bulletin*. The tear resistance, stitch tear, breaking strength, and elongation (stretch) tests were all made on an Amsler pendulum-type machine with the pulling jaws separating at the rate of twelve inches per minute. Moisture absorption was determined by weighing samples of the sole leather before and after submergence in water for 2 hours at room temperature. Resilience was taken as the percentage of rebound of a weight dropped on a standard thickness of the sole leather.

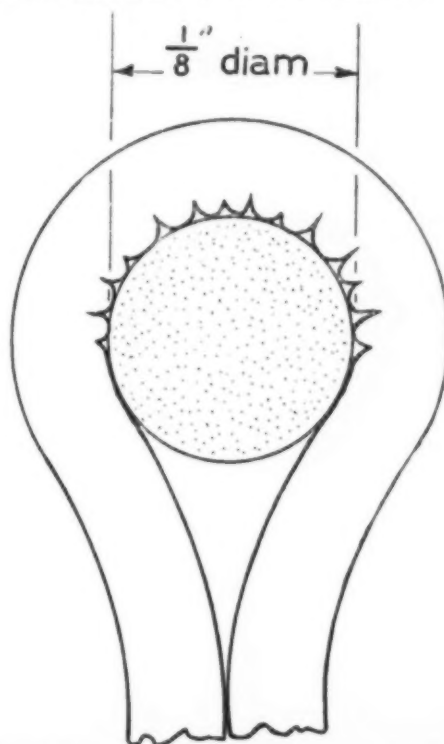


Fig. 2. "Break" of finished side of leather when wrapped around rod of $\frac{1}{8}$ inch diameter.

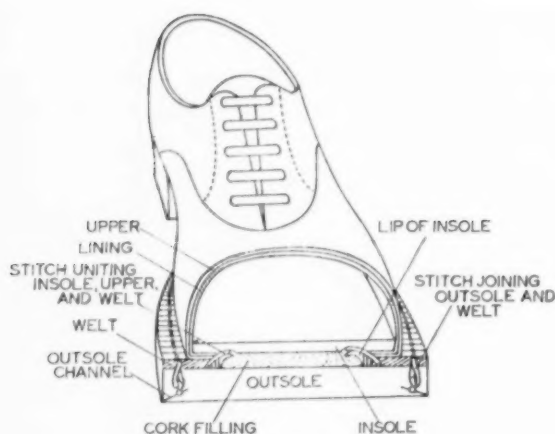


Fig. 3. Welt-type construction.

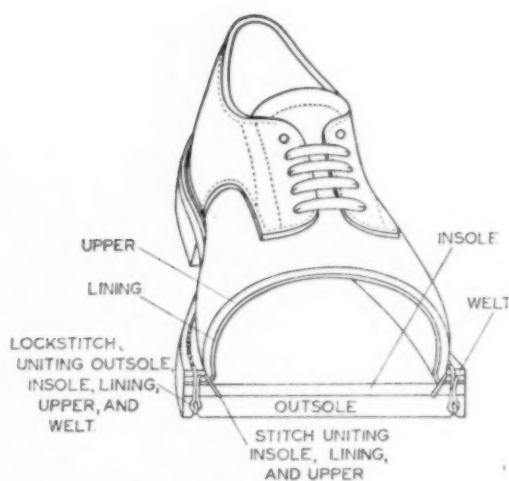


Fig. 4. Stitchdown-type construction.

Uppers of all shoes tested were made of calfskin, a desirable leather because of its pliability, smooth texture, and strength; two shoes had toe caps of shark leather, which in CR's test was found to be superior in scuffing resistance. The shoes were made according to either the welt or stitchdown construction. Figs. 3 and 4 show the general characteristics of these two constructions; numerous modifications of these occur, but are not shown here. Welt construction is the better.

Considerable variability naturally exists between the character and strength of leather used in different samples of the same brand of shoes, for leather is made from hides which are bound to differ markedly, due to differing age, condition, feed, etc., of the animal. Moreover, the hide itself varies from point to point. In CR's abrasion tests of the soles, two samples of different and differently sized pairs were used. The difference between the abrasion

test data on the two samples varied from a negligible amount to an extreme of 40% ("shallow-test"); on the other hand, differences between the test data on the leather for different brands amounted to as much as 70%.

Ratings are cr40.

A. Recommended

Official Girl Scout Shoe, No. 128 (Curtis Stephens Embury Co., Inc., Reading, Pa.) \$4. Welt construction. Rubber heel. Toe shape very good. Quality of soles judged by measurements of resistance to abrasion and to water absorption and of resilience, average. Quality of uppers based on measurements of break, elongation, and breaking strength, slightly below average. Showed, however, good resistance to scuffing. Construction and workmanship of the shoe judged above average, but heel of one shoe not securely fastened. **2**

Simplex Flexies, No. 216-C (Simplex Shoe Mfg Co., Milwaukee) \$3.50. Welt construction. Spring heel. Toe shape very good. Quality of soles, average; of uppers, average. Construction and workmanship, above average. **2**

Playmate, No. 62 (The F. A. Kuhnert Shoe Corp., Rochester, N.Y.) \$5. Welt construction. Spring

SHOE DISSECTION DATA FOR No. 2-A SHOE									
GENERAL DESC.	Black Oxford Blucher			SIZE	9-C				
SHOE CONSTRUCTION	Welt			SHANK PIECE	None				
STAMPED MARKINGS	L 9188								
HEEL DESC.	Spring			HEIGHT, IN.	7/16				
(IF RUBBER) SHOE DUN.	—			ELAST.	—				
SOLE THICK., IN.	.183			SOLE FASTENING AT HEEL	Sewn				
WELT TYPE	Double			WELT THICK., IN.	.088				
UPPER LEATHER, DESC.	Chrome tan calf								
UPPER THICK., IN. AT TOE	.055			VAMP					
INSOLE THICK., IN.	.115								
ABRASIVE INDICES									
Sample from Pair No. 1				Sample from Pair No. 2					
	1a	2a	Ave.	1a	2a	Ave.			
Brand									
	265	259	261	310	344	327			
1 (5%)	2920	2790	176	257	210	223			
deep	178	193	1890	198	158	176			
(heel)		1740				329			
Moisture Absorption									
Percentage									
Sample from:									
Brand	Resilience	Percentage	Pr. No. 1-Pr. No. 2	Break	Pr. No. 1-Pr. No. 2				
1	6.7	4.64	5.56	15.3	.175	.185			
2	7.2	5.98	6.4	14.0	.183	.170			
3	10.9	14.70	11.0	11.3	.200	.205			
4	20.0	22.5	15.1	16.0	.141	.174			
5	10.0	17.25	17.8	14.7					
6	0.2								
Sole Thickness in Inches									
Sample from:									
Brand	Tear Resistance	Stitch Tear	Breaking Strength	Elongation					
No.	Lb.	Lb.	Lb.	Percentage					
1	6.6	15.6	71	35					
2	5.0	25.5	35	47					
3	20.4	50.4*	140	50					
4	7.2	22.5	65	15					
5		55.0*	182	37					
6		29.4	117	44					
		50.7	89	50					
			72	41					
			154	50					
			65	50					
RECAPITULATION OF PRINCIPAL CHARACTERISTICS									
IN RANKING POINTS									
Sole	1a	2a	3a	4a	5a	6a			
Abrasive Units	24.6	16.7	14.9	8.8	5.1				
Resilience	1.7	1.9	2.7						
Moisture Absorption	9.5	7.8							
UPPER									
Break									
Breaking Str.									
Elongation									

The above reproduction shows small portions of some of the data sheets recording the hundreds of observations and calculations entering into these ratings. These samples of the test data give an idea of the vast amount of study, testing, and "figure-work" that is summed up in a few brief lines, in CR's final rating of a product as Recommended, Intermediate, or Not Recommended.

A. Recommended (contd.)

heel. Toe shape very good. Quality of soles, construction, and workmanship, average; of uppers, above average. **3**

Kali-sten-iks, No. 4110 (The Gilbert Shoe Co., Thiensville, Wis.) \$5. Welt construction. Rubber heel. Toe shape very good, but judged a trifle too low. Good wearing soles. Quality of uppers, average. Tongue continuous with upper (desirable). Construction and workmanship good, but one heel not well fastened. **3**

Official Boy Scout, No. 936 (Gerberich-Payne Shoe Co., Mount Joy, Pa.) \$5. Welt construction. Rubber heel. Toe shape good. Quality of soles, average; of uppers, very good. Construction and workmanship, above average. Had toe cap of shark leather, which gave good resistance to scuffing. **3**

B. Intermediate

Powhatan, No. 404 (Virginia Shoe Co., Inc., Fredericksburg, Va.) \$2.50. Welt construction. Rubber heel. Toe shape very good. Sole showed poor wear resistance; quality of uppers, construction, and workmanship, average. **1**

Sundial XRAY, No. 3522-2 (Morse & Rogers, Branch International Shoe Co., Inc., Duane and Hudson Sts., N.Y.C.) \$1.98. Stitchdown construction. Rubber heel. Toe shape good, but judged a trifle too low. Good sole wear resistance; quality of uppers, below average. Construction and workmanship, average. **1**

Thorogood, No. 161 (Albert H. Weinbrenner Co., Milwaukee) \$2.50. Stitchdown construction. Rubber heel. Shoe lined only in part. Toe shape very good, but judged a trifle too low. Quality of soles and uppers,

B. Intermediate (contd.)

average. Construction and workmanship, below average. **1**

Bonnie Laddie, No. 3322 (Morse & Rogers, Branch International Shoe Co., Inc.) \$2.98. Stitchdown construction. Rubber heel. Toe shape very good. Quality of soles, construction, and workmanship, average; of uppers, slightly below average. **2**

Bostonian Juniors, No. 190 (Commonwealth Shoe & Leather Co., Whitman, Mass.) \$4. Welt construction. Rubber heel. Toe shape good, but judged a trifle too low. Poor wearing sole. Quality of uppers, above average; of construction and workmanship, average. Had toe cap of shark leather, which gave good resistance to scuffing. **2**

Buster Brown Health Shoe, No. C803 (Brown Shoe Co., St. Louis) \$2.98. Welt construction. Spring heel. Toe shape good, but judged a trifle too low. Quality of soles, construction, and workmanship, above average; of uppers, poor. **2**

Nature's Own, No. 0310 (John Ennis, Inc., 220 Ashford St., Brooklyn, N.Y.) \$5. Welt construction. Spring heel. Toe shape very good. Quality of soles, average; of uppers, slightly below average. Construction and workmanship, above average. A corrective shoe, rated *B* only if worn on the advice of an orthopedist. **3**

C. Not Recommended

J. C. Penney Co., Inc., No. 20—7120. \$1.59. Stitchdown construction. Rubber heel. Toe shape poor. Poor wearing soles. Quality of uppers, construction, and workmanship, below average. **1**

Notice to Subscribers Requesting Tear Sheets

ON page 202 of the 1940 *Annual Cumulative Bulletin*, a list was given of tear sheets from *CR Bulletins*, on items which had to be left out of the *Annual Cumulative Bulletin* for lack of space. This list was intended primarily for new subscribers, but some old subscribers, not aware that these tear sheets were taken from previously issued *Bulletins*, have ordered certain tear sheets, perhaps without realizing that the material received would in some cases be a duplication of material they had already received.

In order to prevent any possible misunderstanding, we repeat the list which appeared in the *ACB* but include dates of the original issues from which the tear sheets are taken. If any have through misunderstanding received tear sheets containing material they already had at hand, the money remitted will be gladly refunded on request accompanied by the tear sheet in question.

Tear sheets on the following items will be sent on request accompanied by proper remittance in stamps as indicated after each title:

Subject	Price
Adding, Calculating, Numbering Machines, and Check Protectors (<i>ACB</i> '35, cols. 337-338).....	5c
Bicycles (May '39, pp. 11-14).....	15c
Billfolds, Leather (Dec. '38, pp. 11-13).....	15c
Builders' Hardware (<i>ACB</i> '39, cols. 401-402).....	3c
Camping Equipment (<i>ACB</i> '39, cols. 439-440).....	5c
*Chalk, Colored (Apr. '39, p.25; Jan. '40, p.16 [correction, Mar. '40, p.25]; June '40, p.5).....	25c
Consumer's Bookshelf, Recommendations for (<i>ACB</i> '38, cols. 459-460).....	5c
*Croquet Sets (June '40, pp. 14-15).....	15c
Dog Food (<i>ACB</i> '37, cols. 122-124).....	5c
Egg Beaters (May '38, pp. 6-7).....	15c
Fire Extinguishers (<i>ACB</i> '35, cols. 285-292).....	5c
*Firearms and Ammunition (Oct. '39, pp. 18-21).....	15c
Flashlights (<i>ACB</i> '39, cols. 326-328).....	5c
Food Choppers (<i>ACB</i> '39, col. 363).....	5c
Fuses, Electric (<i>ACB</i> '39, col. 326).....	5c

*Garden Hose (June '40, pp. 12-13).....	15c
*Golf Balls (June '40, p.22).....	15c
Heating Appliance Cord Sets (<i>ACB</i> '39, cols. 395-396)...	5c
Household Appliance "Approval" Agencies (Good Housekeeping, etc.) (<i>ACB</i> '39, cols. 411-414)....	5c
Ice Cube Breakers (Nov. '39, pp. 18-19).....	15c
*Ice Skates, and Shoes (Jan. '40, pp. 19-21).....	15c
Lamps, Spot-Beam Bed (<i>ACB</i> '39, cols. 325-326).....	5c
*Lawn Sprinklers (June '40, pp. 6-8).....	15c
Mimeograph Machines and Supplies (<i>ACB</i> '35, col. 336)...	5c
Motors, Household Electric (<i>ACB</i> '39, col. 409).....	5c
Outboard Motors (May '40, pp. 8-10).....	15c
Pewter (<i>ACB</i> '39, col. 376).....	5c
*Pitchers, Dripless (Apr. '40, pp. 25-26).....	15c
Playing Cards (Dec. '39, pp. 2-3).....	15c
*Plumbing Cross-Connections, Danger From (Oct. '39, pp. 5-9).....	15c
Pressure Cookers (<i>ACB</i> '39, cols. 377-378).....	5c
Roasters, Electric (<i>ACB</i> '39, cols. 360-361).....	5c
Roller Skates (<i>ACB</i> '39, cols. 441-442).....	5c
Scales, Weighing (<i>ACB</i> '37, cols. 361-365).....	5c
Sewing Machines (<i>ACB</i> '39, cols. 396-398).....	5c
*Sewing Machine, Cleaning the (Apr. '40, pp. 8-11).....	15c
*Shoe Laces, (Oct. '38, p.12).....	15c
Table Tennis Balls (<i>ACB</i> '39, cols. 447-448).....	5c
Tennis Balls (May '40, pp. 14-15).....	15c
Tennis Rackets and Strings (May '39, pp. 2-4).....	15c
Tobacco Products (<i>ACB</i> '39, cols. 429-435).....	5c
Typewriters and Writing Supplies, Fountain Pens, Mechanical Pencils, Ink, Ribbons, Notebooks, etc. (<i>ACB</i> '39, cols. 415-428).....	5c
Vacuum Bottles (<i>ACB</i> '39, cols. 400-401).....	5c
Water-Supply Systems, Private (<i>ACB</i> '39, col. 437-438)...	5c

***Important:** The asterisk indicates a *General Bulletin* (non-confidential). Subjects not marked with an asterisk are confidential material and available only to subscribers to the full \$3 service.

HOUSE PAINTS FOR EXTERIOR WOOD SURFACES

IN the September 1940 *Annual Cumulative Bulletin*, new ratings of a number of brands of paints for exterior wood surfaces were given. Because of the constantly growing amount of material which must find a place in the most compact possible form in the *Annual Cumulative Bulletin*, space was lacking to include more than a few listings, and much of the important discussion which would ordinarily have been given was necessarily omitted. The material given in this article supplements that in the *Annual Cumulative Bulletin*, which may be consulted for additional brand listings of exterior paints and for a few other points of importance.

In maintaining a paint coating on a house, it is risky to keep shifting from one type of paint to another. Even paints that are very good in themselves may behave badly when applied over paints of radically different types. Many of the older "hard" types of paint, however, have nearly disappeared from the market and most of the "first grade" house paints now available are of "medium" to "soft" types which are less likely to make trouble when a paint of one make or brand is applied in repainting, over a paint of a different brand.

Homeowners may find it difficult to buy "hard" paints, necessary if the best job is to be secured in case the house was previously painted with "hard" paint. If the modern "soft" paints are used on top of the "hard" types, less satisfactory results will be obtained.

Ratings of exterior paints given here and in the September 1940 *Annual Cumulative Bulletin* are confined to the "consumer" or "trade sales" products of the various manufacturers. These are the products that are advertised to the public and displayed on the shelves of retail dealers. Most manufacturers provide a separate line of paint products of different composition designed to be sold exclusively to contracting painters. As a rule the products sold to such painters are definitely inferior in quality (often markedly so), and are of course sold at much lower prices than the paint products sold directly to ultimate consumers. House paints

belonging to "painters' lines" may be sold in the form of paste or semipaste paints or as prepared (ready-mixed) paints, but house paints belonging to "consumers' lines" are practically always prepared paints.

In the sale of pure white lead paints, the manufacturers depart from the above trade custom. Most of these are sold in the form of soft paste and by weight rather than by volume, and the same product is sold to painters and to consumers, though at slightly different prices. For a finish coat, the white lead should be mixed in the proportions of 100 pounds of soft paste, 3 gallons of linseed oil, and 1 pint or $\frac{1}{2}$ pint of liquid paint drier according as raw oil or boiled oil is used. This makes slightly more than 6 gallons of white paint; for light colors, small proportions of colors-in-oil must be added. At customary retail prices for the lead paste, oil,

and drier, pure white lead paint made in this way is cheaper in net cost per gallon than any prepared paint of comparable quality. Some manufacturers are now offering pure white lead paint in prepared form, in light colors as well as white, and sell it by volume. These "liquid white lead" paints, though more convenient for the inexperienced painter, are more expensive and often are inferior in quality, because in compounding them the manufacturer is tempted to use insufficient amounts of white lead pigment. (*Lead paints should not be used for interior work of any kind on account of the danger of lead poisoning in such use. Lead paint fails by dusting or "chalking," hence an appreciable part of the total paint put upon the walls or ceilings is ultimately breathed by those who reside in the house, or is ingested in the food and beverages daily consumed.*)

The general revamping of paint formulas during the past year or so is, on the whole, in the direction of improving the serviceableness of the products to consumers. Improvement is noted in the following directions: Among the "first grade" consumers' lines of prepared paints (other than pure white lead paints), there is now materially less divergence in

Successful painting requires good paint, skillful application, and intelligent maintenance—the last two being fully as vital as first-class paint. Even a good paint can give poor service when applied over a paint of a radically different type. The present trend in paint formulation is toward a better product, improving the serviceability of the paint to consumers; there is also, lately, less divergence in composition of the different brands, better conformance by the manufacturers with the findings of the most trustworthy modern paint research, and more general disclosure of formula details on labels. There is one persistent fault, however, in that manufacturers' directions for application often call for greatly excessive thinning of the paint for application. Where more than one coat of paint is to be applied, the modern special primers or undercoaters are recommended, one of their chief merits being that manufacturers' directions for their use do not call for excessive thinning.

composition of the different brands. The formulas are now designed to conform more nearly to the findings of modern paint research rather than to outworn, frequently quite meaningless or imaginative, advertising claims. Tinted paints (paints of the light colors) are of a type and quality more nearly similar to the white paints of the same brands. And finally, the practice of printing the formula on the label is notably increasing.

The white paints now are nearly always TLZ (pigment composed of titanium dioxide, white lead, zinc oxide, and "extenders" such as magnesium silicate). Tinted paints likewise have gone over very largely to the TLZ type, using as a rule the recently developed "chalk-resistant" titanium dioxides so that they hold their colors better than was formerly the case with TLZ paints. In other brands the tinted paints are made with lead titanate, white lead, zinc oxide, and extenders, a combination that makes durable paints with high opacity and good retention of color. The old LZ paints, in which white lead and zinc oxide are the principal pigments, may now be considered practically obsolete for white paint and rapidly becoming obsolete for paints of light colors, although they are still used for the darker tints in many brands. The zinc sulphide pigments, such as lithopone, are used chiefly in what within the trade are known to be "second grade" paints.

It should be appreciated that in the modern paint formula, the content of white lead and zinc oxide is much lower and the content of extenders such as magnesium silicate and barium sulphate much higher than it was in the old LZ paints. The large amount of extender present often will not be realized unless the consumer remembers that the terms "titanium pigment," "titanium-magnesium," "titanium-barium," and the trade name "Titanox," which often appear in the label formula, describe a mixture of titanium dioxide and extender, in which three-fourths by volume may be extender. The opacity (or hiding power) of the new paints, however, is usually much higher than it was in the old LZ formulas, partly because the new paints are richer in total pigment (on a volume, not a weight, basis), and largely because titanium dioxide and lead titanate have very high opacity. In fact, some of the new paints have so much opacity that painters tend to spread them out into coatings so thin that durability is actually impaired. The paint user's interest will be served best if he fixes his attention on the application of enough paint for good

If you think any article in this issue of CR's General Bulletin would be of interest to any friend or acquaintance who is not a subscriber, please send us a postcard to that effect, giving your name and address as well as your friend's, and mentioning the article by title. We shall be glad to send your friend tear sheets of the article and a leaflet describing CR's work.

durability rather than on seeing how far he can make the paint go, or being persuaded by sales arguments that one paint is superior to another because of the greater number of square feet that can be covered by a gallon.

Some firms have advertised that one coat of their brand of paint will

give a satisfactory coating on buildings not previously painted for many years, and may even publish testimonials from satisfied customers to prove their statements. Almost invariably the satisfied customer is one not experienced with paint and one who is certainly not in a position to judge expertly the results he has gotten. One coat of paint applied to a surface which has not been repainted for many years will usually result in a smooth, uniform, dead flat surface, instead of the glossy finish normally provided by the paint used. The old surface is absorptive enough to rob the paint of much of its oil and to do so fairly uniformly over the entire surface. The hiding power of the paint is thus increased by the change from gloss to flat finish, and, in addition, more paint than usual will be applied because of the absorptiveness of the surface. Such a coating, however, actually affords very poor and very little protection of the wood or, at best, protects the surface for only a short time. Many farmers do such one-coat work intentionally on old barns, for example. In cases in which the consumer understands what he is getting, this procedure may be permissible. It often happens that a second coat applied over the first "satisfactory" one will result in a spotty, uneven surface, glossy in some places, flat in others, and, of course, varying in apparent color. Consumers have been known to complain that one coat of a certain paint gave a beautiful job but that after an "unnecessary" second coat had been applied the job was "terrible." In these cases, the real trouble was that the second coat was usually too light, necessitating a third, and final, coat. What the consumer thought was a beautiful one-coat paint job was actually only a quite inadequate but *uniform-appearing* flat finish, of quite the wrong type for proper and lasting protection of the wood.

There is almost no field in which the ultimate consumer's opinion of the quality of the job which he has gotten is of less interest or significance than with paint, for not one consumer in a hundred thousand is qualified to judge by inspection the difference between a good paint job and a mediocre one, or to know whether an apparently bad paint job is the result of the use of poor paint or of other conditions, including poor workmanship or extra

severe surface or exposure conditions, as for example paint damage of the type discussed in the references cited in footnote 1. The consumer is too often persuaded by what the paint manufacturer or painting contractor wishes him to believe, and is in no position to recognize paint defects unless they are of a major or compelling character, coming promptly into evidence. Ability to judge quality of paint work is possessed by few painting contractors and by almost no laymen. Only a *paint chemist* who has given extensive study to the problem and has no ax to grind for a particular type or brand of paint, can give after careful inspection even a fairly dependable opinion on the quality of a paint job, and what caused its failure if it was unsuccessful.

There are some trends in modern paint formulation which, if carried too far, will not be advantageous to consumers. An important practical objection to excessively high opacity has already been mentioned. Displacement of white lead and zinc oxide in exterior paints by titanium dioxide and extender (representing a material saving in costs of raw materials) results in improved serviceableness *provided* that enough white lead and zinc oxide remain to perform their necessary chemical functions. There has been rumor to the effect that the level of these pigments in first-grade paints is to be reduced from its present proportion to the unsafe minimum that has long been used in second-grade paints. So far, very few manufacturers have actually done this.

Directions for application of paints (printed on container labels) remain, as they long have been, outrageously unreliable. Though many consumers assume that the manufacturer is the best judge of his own product and must, of course, know how it should be applied, most paint manufacturers afford a very poor example of this supposed special wisdom and expertness of the producer, for, as the trade well knows, the majority of manufacturers call for gross overthinning of priming coats and undercoats and many call for excessive thinning of finish coats. Often the improvement effected by use of a modern formula is completely undone by the printed instructions for thinning, dictated by the sales manager instead of the chief chemist or the director of research. The reader should note, however, that ratings of exterior paints given here and in the 1940 *Annual Cumulative Bulletin* are based on composition after the paints have been thinned according to the manufacturers' own directions for finish coat.

Nearly all manufacturers now offer special products for use as the first coat in painting when more

than one coat is to be applied. These products are variously called "primers," "undercoaters," "foundation coats," etc., and most of them are said to have "controlled penetration," which means that part of the vehicle is a heat-treated or chemically-treated drying oil or a varnish. The controlled penetration feature is desirable but is not as important as it is made to appear. In general, these products may be strongly recommended for all exterior painting in which more than one coat of paint is being applied. Their chief merit lies in the fact that they are not grossly overthinned, and the directions for application usually call for little or no thinning by the user. In contrast, directions for using the finish paint for priming or undercoating (still carried on most labels as an alternative procedure) almost always call for excessive thinning, thus leading to inferior results. Note particularly, however, that the special primers should never be used for finish coats, should not be allowed to stand on the wood more than a week or two before the finish paint is applied, and should always be of the same brand as the finish paint. Never use a primer of one brand and a finish paint of another.

Most manufacturers now call their primer and line of finish paints a "two-coat system" and recommend that new exterior woodwork may be satisfactorily painted with one coat of primer and one coat of finish paint. They rarely make clear the essential proviso under which this is true, namely, that both products be capable of proper application in unusually thick coats under all reasonable weather conditions, and that one gallon of primer be spread over no more than 450 square feet and one gallon of finish paint over no more than 550 square feet of surface. When used for repainting, however, the primer should usually be spread over 600 and the finish paint over 700 square feet per gallon.

The following ratings of exterior paints are cr40 and are based on an expert's careful study of composition and directions for application as stated on sample labels submitted by the manufacturers in 1940. There has been a very general revamping of paint formulas during the past year and this is still in progress. Therefore, there is no way of telling when any one of the products reported may be so changed in composition as to render its present rating inapplicable. The listings are, however, as nearly up to date as it is possible to make them. ¶The 1940 *Annual Cumulative Bulletin* gives six additional ratings of white lead, nine additional ratings of mixed-pigment prepared paints, six additional listings of two-coat systems, and three additional listings of red barn paints.

¹ *Avoidance of Paint Peeling on Air Conditioned-Insulated Dwellings—Circular 560.* Free from National Paint, Varnish and Lacquer Association, Inc., 1500 Rhode Island Ave., N. W., Washington, D. C. (Present supply of this circular is limited, but should be available in technical libraries.)
Some Causes of Blistering and Peeling of Paint on House Siding, by F. L. Browne, 13 pp.; *Condensation Problems in Modern Buildings,* by L. V. Teesdale, 14 pp. Both free from Forest Products Laboratory, Madison, Wis.

Pure White Lead Paint, Type L**A. Recommended**

Anaconda White Lead Paste (Anaconda Sales Co., 20 N. Wacker Drive, Chicago)

Mixed-Pigment Prepared Paints, (white and light colors); Type TLZ except as noted

A. Recommended

New Era (Acme White Lead & Color Works, 8250 St. Aubin Ave., Detroit)

Fuller (W. P. Fuller & Co., Mission and Beale Sts., San Francisco) Light colors are type LZ with lead titanate.

Homeguard (Distrib. Gamble Stores, Minneapolis)

Keystone 100% Pure (Keystone Varnish Co., 71 Otsego St., Brooklyn, N.Y.)

Climatic No. 2 for the Middle West (Lincoln Paint & Color Co., Lincoln, Nebr.)

Best Quality (Marshall-Wells Co., Duluth, Minn.)

Minnesota Quality and *Chi-Namel Super House Paint* (Minnesota Linseed Oil Paint Co., and Chi-Namel Paint & Varnish Co., 1101 S. Third St., Minneapolis) These are the same paints, identical in composition.

B. Intermediate

Armstrong's LTZ, *Koverbest*, and *Chief* (Armstrong Paint & Varnish Works, Republic Paint & Varnish Co., and Chicago Paint Works, 1330 S. Kilbourn Ave., Chicago) These paints are of the same formula and manufacture and differ only in the labels. The manufacturers' directions are unsuitable as they call for too much thinning.

Kyanize (Boston Varnish Co., Everett, Mass.)

Carmole (Carpenter-Morton Co., Everett, Mass.)

DuPont Prepared (E. I. du Pont de Nemours & Co., Wilmington, Del.)

Super House Paint (John Lucas & Co., Inc., Race & Garstin St., Philadelphia)

B.P.S. (Patterson-Sargent Co., E. 38 & Saint Clair Ave., Cleveland) The white paint is type TLZ and is satisfactory; the tinted paints are type LZ and low in content of pigment when thinned as directed on labels.

Sun-Proof (Pittsburgh Plate Glass Co., P.O. Box 1575, Milwaukee) Directions call for too much thinning.

Dubleduty (Sewall Paint & Varnish Co., 1009 W. 8 St., Kansas City, Mo.) White paint is type TL with low content of white lead; tinted paints are type LZ with lead titanate but are low in pigment content.

Two-Coat Systems for Exterior House Painting on New or Previously Painted Woodwork**A. Recommended**

White Primer and *Fuller Prepared Finish Paint* (W. P. Fuller & Co.) Disregard the manufacturer's directions to thin the primer with turpentine when painting new woodwork.

Primer Surfacer and *Keystone 100% Pure Finish Paint* (Keystone Varnish Co.)

Weld-Tite Primer and *Minnesota Quality Finish Paint* or *Super-Primer* and *Super House Paint* (Minnesota Linseed Oil Paint Co., and Chi-Namel Paint & Varnish Co.)

Primer and *Lion Brand Finish Paint* (St. Paul White Lead & Oil Co., Water and Starkey Sts., St. Paul)

Primarite and *SVW Finish Paint* (Standard Varnish Works, Port Richmond, S. I., N. Y.)

B. Intermediate

The following are primers judged to be suitable as a first coat under the corresponding brand of finish paint (listed above or in the 1940 *ACB*) wherever more than one coat of paint is being applied, but in painting new exterior woodwork it is recommended that a total of three coats (one prime coat, two finish coats) of paint be applied:

Prime-Coat or *Prime-Kote* (Armstrong Paint & Varnish Works, Republic Paint & Varnish Co., Chicago Paint Works)

Safe-T-Prime (Carpenter-Morton Co.)

Doublequick Exterior Primer (Jewel Paint & Varnish Co., 345 N. Western Ave., Chicago)

Universal Primer (Lincoln Paint & Color Co.)

Staycoat Primer (Marshall-Wells Co.)

Moorewhite Primer (Benjamin Moore & Co., 509 Canal St., N. Y. C.)

Sun-Proof Exterior Primer (Pittsburgh Plate Glass Co.)

Undercoat (Sewall Paint & Varnish Co.)

Iron Oxide Red Barn Paints (Type F)**A. Recommended**

Zenith Barn and Roof Paint (Marshall-Wells Co.)

No. 550 Barn and Roof Paint (Minnesota Linseed Oil Paint Co.)

Security Red Barn Paint (Benjamin Moore & Co.)

FL-Red Oxide Barn Paint (St. Paul White Lead & Oil Co.)

No. 175 Barn and Roof Paint (Standard Varnish Works)

IN THE course of the week, CR receives hundreds of letters from subscribers, requesting detailed information either on a topic not heretofore discussed in the *Bulletins* or on one that has been treated, but of which some special aspect is of personal interest to them (though perhaps unimportant to others). We earnestly ask of our subscribers that before they appeal to CR for such special advisory service in connection with individual problems (a service which is not and cannot be included in the *Bulletin* service at \$3 a year), they reread carefully the detailed considerations set forth on page 9 of the March 1940 *Bulletin* (reprint gladly sent to any subscriber on request accompanied by a 3c stamp). It is also requested that subscribers invariably enclose with their letters sufficient postage for reply or a ready-addressed stamped envelope about 9½ x 4 inches in size.

REFERENCE BOOKS—Part I

THE American book market is flooded with reference books of all kinds; the purchaser can choose from among 125 encyclopedias, 50 dictionaries, and other compendiums of knowledge, ranging in price from a few cents for a cheap dictionary to well over a hundred dollars for the best encyclopedias. These works are continually revised and reissued, so that editions pile up. Many are heralded with a fanfare of advertising whose burden is: Success and popularity are yours if you will only buy these books. Hundreds are sold each year, many to those who still believe that culture and education can be packaged between the covers of an impressive volume, and then marketed like potatoes or electric light bulbs. Disappointment comes frequently when the purchaser begins to use his set of books. He then often finds that he has bought an inaccurate, old, or poorly edited work sold to him by effective arguments in the mouth of an aggressive or ingratiating salesman.

There are numerous safeguards by which the purchaser can protect himself from misleading advertisers and unscrupulous agents for reference books. Anyone who does not know his way around among reference books should by all means buy from a reputable book store or direct from the publishers, not from an agent or canvasser. The book agent is trained to "sell" his product by every sort of persuasive argument, and to gloss over its deficiencies. His "line" often sounds most plausible—at the time. Moreover, he is ephemeral; he cannot be sought out later for redress. If perchance he could be found and brought to book, the probabilities are he would be financially irresponsible, or judgment-proof. He does not need your good will beyond the time of sale. Book buyers have found in a surprising number of cases that when they complain to the agent's firm, the firm will simply deny that he acted

with its authority when making representations and promises, or specifying the terms of any oral contract. "Our agent was not authorized to make that kind of offer" is a common reply from such firms.

Be very careful about salesmen whose technique consists in clever flattery, saying, for example, that the prospect has been chosen out of thousands to become the recipient of a free set of the books or encyclopedia on account of his importance or standing in the community. There is always a string to such an offer, and as often as not the string will involve an expenditure that just about equals the retail value of the work to be given away.

Then, too, marketing through agents is the most expensive method. Salesmen's expenses and commissions amount to more than the expenses incident to indirect merchandising, and that additional expense is added to the cost of the book. Most of the books listed in this and the succeeding *General Bulletin* article can be bought from book stores or from their publishers. One can often get a price

concession from a book store or a publisher, but rarely from an agent. The publisher or store will often make substantial allowance for an old set of their own or other reference books. Any claim by the salesman that his book can be bought only through him should be equivalent to an alarm sounded to warn the prospective purchaser. It will be rare indeed that a first-rate or important reference work will be marketed exclusively through house-to-house canvassers or "exclusive agents." There is usually the best of reasons to beware of any book or set that is sold *only* through agents!

The purchaser should never put blind trust in agent or store or publisher; he should himself carefully examine the book, first noting who the publisher is. Is it a firm of good repute? Has it ever been proceeded against by the Federal Trade Com-

This is the first of two articles on encyclopedias and reference books compiled for Consumers' Research by Professor MacEdward Leach, of the Department of English Language and Literature of the University of Pennsylvania. This study has been prepared in response to the large number of inquiries received on the subject from subscribers, and will serve to bring up to date the previous report in the October 1937 Bulletin. We believe this study will be the most useful and complete source of information on the subject for the general reader, and that the judgments herein expressed may be accepted as having a high degree of reliability for the purposes of the average consumer.

This article discusses reference books in general, and lists encyclopedias, one-volume encyclopedias and reference books, annual encyclopedias and year books, children's encyclopedias, and religious encyclopedias. Among the important works considered are the Britannica, the Americana, the Catholic Encyclopedia, and the Encyclopedia of Religious Knowledge. A few additional listings of relatively poor or unimportant works will be carried over to the November Bulletin, if space therein permits. ¶In a second article, which is expected to appear in a future issue of the General Bulletin, it is planned to treat the subjects of anthologies for children, dictionaries for adult, grade, and high school use, and dictionaries of usage.

mission (Washington, D.C.) for misleading advertising claims? Was the nature of its misrepresentations such as to cast serious doubt upon its general honesty and sense of responsibility to consumers? (Misrepresentations made are often of an outrageous character, causing grave loss to thousands of consumers and cheating the very people who could least afford to make an unwise purchase of an expensive set of books.) One needs at least to be on one's guard when the name of a publisher resembles a name associated with another and better-known work. It is not the Standard Encyclopedia Corporation, for example, which publishes the *New Standard Encyclopedia of Universal Knowledge* or *The New Standard Dictionary*; both of these are publications of Funk and Wagnalls Company. There is also reason to be careful when the name of a publishing house sounds like that of an educational institution or college, e.g., The Yale Research Publishing Company, or Mount Holyoke Research Society. When the name of an institution does appear, as it will in occasional cases, be sure that the work is in fact and not merely in appearance related to that institution, and that it reflects the learning and scholarship of its faculty and fellows. Whenever in serious doubt about the responsibility of a publishing firm, spend the small sum of two dollars or thereabouts that it may cost to have a financial and credit report on that firm obtained through your bank or some other financial institution with which you are in touch. Such reports show the number and character of the principals in the firm, their past ventures, whether they have been successful in their affairs, whether they pay their bills, whether they have a good reputation as men of standing and integrity in their community, and something of the magnitude of their operations and the general character of their management and relations with suppliers and others. Knowledge concerning all of these points is essential when an expenditure running into \$50 or \$100 or more is in prospect in connection with the reference work—in any case where reliable and unbiased information is not available about the publication itself, from this *Bulletin* or from some person of special knowledge and experience in the field of reference works.

The purchaser should next look to the editors of the work and the contributors. Often many of the famous men whose names decorate the title pages of reference books have had little to do with the work itself. Even fairly reputable publishers do window dressing by buying a name and a set of degrees as dummies for the title page. (One salesman explained that his firm had "used the best names that money could buy," which was not intended to be, but was in fact, a serious reflection upon the college president whose name led the list of Ph.D.'s and other eminences connected with the second-rate work.) One should note how many of

the articles are signed and the scholarly standing of the men who sign them. Many encyclopedias are office-made by hack writers who do a purely clerical job in working over and skillfully disguising articles from other encyclopedias and reference books.

Having made a general examination of the book, paying attention to the printing, the quality of the binding, and the illustrations, the purchaser should next turn to the articles themselves. He should *not* test a reference book by examining general or highly important subjects, like the United States, or The World War. Such articles are always written with great care, because the attention of so many persons interested and able to note errors will be focused upon them. He should, rather, select a specialized article on a subject he knows thoroughly himself. If he is a farmer, he should read the article on fertilizers; if he is a mechanical engineer, the discussion of forging or machine tools or time-measurement. If he is a radio or electrical engineer, the article on vacuum tubes, telephony, or electric power stations will give him a clue to the care and thoroughness of the work. Such sampling, if several articles are examined, will give any observing reader a fair idea of the accuracy and value of the rest of the work. In judging a book, pay no attention whatever to the sample pages prepared by the publisher; they are selected to impress.

Modern encyclopedia publishers tend to "constant" revision rather than to periodic new editions to bring their books up to date. A revision may mean very little—just enough to include recent death dates and to warrant a new copyright date. To check the up-to-dateness of a work one should compare its statistics with those in the current year's edition of the *World Almanac*: e.g., population figures, naval tonnage, imports. Then the purchaser should check the material in the annual supplementary volumes or year books (or the loose-leaf material) that most encyclopedia publishers issue, to see how much of that has been incorporated into the general work in later printings. This method of constant revision makes it imperative for the purchaser to secure the *last printing*. *Britannica*, 14th edition, A Printing, is very different from *Britannica*, 14th edition, K Printing. (The letter denoting the series of the printing is usually in the lower right corner of the last page of each volume.)

Two general methods are used by publishers to keep purchased sets up to date: annual "year books," and loose-leaf material to be inserted in the text. The first is so superior that more and more publishers are giving up the loose-leaf idea.¹ But the annual volumes are usually fearfully overpriced. Unless a substantial reduction in price is made for this annual service at the time the set is purchased,

¹ For a discussion of the unsatisfactoriness and practical disadvantages of the loose-leaf system, and of its application to Consumers' Research material, see CR's November 1939 *Bulletin*, page 22.

the owner is advised to dispense with it. The *World Almanac* or the *Statesman's Year Book* will usually suffice for this purpose, at a fraction of the price.

When in doubt about a book or publisher the purchaser should make use of easily available sources of information. These are: (1) *Guide to Reference Books*, by Isadore Mudge, an accurate, short listing of all reputable reference works and many others, gives information as to price, value, nature of the works; this can be found at the reference desk of all large or moderately large libraries. (2) The American Library Association's *Subscription Books Bulletin*, published quarterly by the Association at 520 N. Michigan Avenue, Chicago (\$2 per year), reviews all reference books, usually edition by edition, and gives detailed information about them. All up-to-date libraries have files of S.B.B.'s. (3) Louis Shores' *Basic Reference Books*, published by the American Library Association, Chicago (second edition, 1939, 486 pp., \$4.25). Discusses methods of evaluating reference books, lists, with detailed comments, 172 titles reported to be actually most used, and comments briefly on 254 additional books. Especially valuable are the lists of reference books by subject, such as the important books for the study of law, of business, of biology, and of literature. (4) Any trained reference librarian or bibliographer. (5) In addition to the foregoing, and for a purely physical ranking, without critical reviews or discussion, see *The Comparison of Encyclopedias* and *The Comparison of Dictionaries*, compiled and issued periodically by Laurance H. Hart, 42-25 Layton St., Elmhurst, N.Y., 25c each. These have the practical convenience of covering on two single sheets a large number of reference works (29 encyclopedias and 21 dictionaries were cited in the most recent issues) and listing them comparatively in columns under such heads as "Name," "Publisher," "Price," "Pages," "Illustration," "Strong Points," and "Remarks."

Encyclopedias

A. Recommended

Encyclopaedia Britannica, 14th ed. (Encyclopaedia Britannica, Inc., Chicago) 24 vols. 1939 revision. \$139.20; buckram, \$149. This is a general, authoritative, detailed encyclopedia. It is no longer British, being edited in America by Americans (Walter Yust, editor); its national emphasis, if any, is American. A large board of contributing editors, all experts in their fields, write and sign the important articles. It has full sets of maps, diagrams, statistics, bibliographies, cross indexes—all the apparatus necessary to get information in any field. This revision is to about March 1939; it contains much new material, but not enough to justify discarding an earlier 14th or an *Americana*.

Encyclopedia Americana (Encyclopedia Americana, N.Y.C. and Chicago) 30 vols. \$150 to \$240; a prepublication offer prices a 1940 edition at \$108.50. Most of the remarks describing the *Britannica* apply also to the *Americana*. It is ably edited, and in the opinion of critics in some fields of knowledge, it has, in recent editions, out-

ranked the *Britannica* as an encyclopedia for scholars. The essential difference between the *Britannica* and the *Americana* is that *Americana* does not contain so much general material, is weighted more heavily on the side of American topics, and breaks the matter into smaller items, leaning more toward the dictionary style. The *Britannica*'s method of using longer articles to include the minutiae is superior in that it puts details in their proper relations. For quick fact-finding, and for the non-specialist, non-scientist user, the *Americana* will perhaps be the better. *Britannica* contains more discussion, more maps (500 against 150), more illustrations.

Note on the *Britannica* and *Americana*:

The *Britannica* is believed by many critics to excel the *Americana* in respect to the originality of its material, and is believed also to contain a larger proportion of material written by specialists—whence the *specialist-user* may be inclined to prefer the *Britannica* over the *Americana*. An astronomer, for example, made a study of the two encyclopedias' treatments of subjects in his specialty. He found that articles in the *Britannica* were all somewhat better than articles in the *Americana*, in accuracy and up-to-dateness. This critic also noted that some *Americana* articles contained little or no new information subsequent to about 1900; others, none since about 1918. ¶It is CR's belief that the user of reference books should give considerable weight to the opinions of scientists on articles in their specialties. Science has many solidly-based and well-established facts on which objective tests of encyclopedia articles can be based. On scientific questions, therefore, comparisons of the merit of discussions can usually be made more reliably, and more objectively supported, than with articles on historical, social, or aesthetic subjects.

B. Intermediate

Doubleday's Encyclopedia (Doubleday, Doran & Co., Inc., N.Y.C.) 11 vols. 1938. \$49.50.

Encyclopaedia Britannica, 14th ed. 1929; *Encyclopedia Americana*, '32 or '36. If one cannot afford the latest revision of the current edition of the *Britannica* or *Americana*, he should buy, after some shopping for comparative prices, an earlier printing or edition of the *Britannica* or *Americana* rather than a new set of one of those encyclopedias that are listed in this *B. Intermediate* group. The price would often be about the same. Such copies can be purchased in auction rooms, in secondhand book stores, and from firms like the Encyclopedia Exchange, Chrysler Bldg., N.Y.C., for from \$25 up, depending on condition and date. These older works can be supplemented by year books and almanacs. On many scientific subjects, such as mathematics, general physics, probability, etc., some of the best and most original, well-organized material that has ever been put into encyclopedias appears in the very early or ninth edition of the *Britannica* which, when found, can be bought very cheaply from secondhand book stores. In later editions, many of these valuable articles were abandoned entirely to make place for more ephemeral, popular, and timely material that made for greater salability of the book to the general or only superficially informed reader.

Everyman's Encyclopedia (Dent, London; E. P. Dutton & Co., Inc., N.Y.C.) 12 vols. 1935. \$30. Good, medium-priced work.

National Encyclopedia (P. F. Collier & Son Corp., N.Y.C.) 10 vols. \$39.50. Limited in scope and inadequate except for those who desire an inexpensive set for home use, where close knowledge of details is not a desideratum. Too many of the articles appear to be based on conventional sources and lacking in original contributions.

New Standard Encyclopedia of Universal Knowledge (Funk and Wagnalls Co., N.Y.C.) 25 vols. 1937 revision of 1935 edition. \$13.80. Of the very cheap encyclopedias, this is the best. (But see the one-volume encyclopedias listed.)

Winston's Cumulative Loose-Leaf Encyclopedia and Dictionary (John C. Winston Co., Philadelphia) 12 vols. \$60. Judged overpriced in comparison with *Britannica* or *Americana*. Has certain good features, but take the word of CR and experienced librarians that there are few homes—or even offices or libraries—where someone will assume, month in and month out, the responsibility for keeping the loose leaves filed promptly and correctly (see footnote referring to loose-leaf feature).

World Wide Illustrated Encyclopedia (Blue Ribbon Books, Inc., N.Y.C.) 2 vols. \$5.98 to \$7.98.

Some additional listings of less desirable reference books will appear, if space permits, in the November *Bulletin*.

One-Volume Encyclopedias and Books of General Reference

The one-volume encyclopedia is valuable for quick desk reference to check facts, statistics, dates, etc.

A. Recommended

The Columbia Encyclopedia (Columbia University Press, N.Y.C.) 1973 pp. 1940. \$17.50. Excellent. This is the 1935 edition, plus 24 pages, bringing material up to date through Sept. 30, 1939.

Lincoln Library of Essential Information (Frontier Press Co., Buffalo, N.Y.) 1938. \$15.50.

B. Intermediate

Modern Encyclopedia (Wm. H. Wise & Co., N.Y.C.) \$1.95.

The New Concise Pictorial Encyclopedia (Garden City Publishing Co., N.Y.C.) 1271 pp. \$1.79; \$2.79, revised from *Facts, The New Concise Pictorial Encyclopedia*. 1939. Very compact, and full of useful information. Maps and pictures. Usually accurate.

Volume Library (Educators' Association, N.Y.C.) 2400 pp. 1938. \$13.75. This is a new book throughout. It is somewhat uneven, here and there inaccurate, but contains a great mass of good material on a very wide range of subjects.

Annual Encyclopedias, Year Books

Many of these, referred to earlier in the text, are put out to keep the big, general encyclopedias up to date. With each revision of the larger work, their contents are incorporated into it.

A. Recommended

Americana Annual (Americana Corp., N.Y.C.) Special price to purchasers of *Americana* (given by one agent as \$1.95); \$10 to others. Overpriced at \$10.

Britannica Book of the Year (Encyclopaedia Britannica, Inc., Chicago) \$2.50 to purchasers of the *Britannica*; \$10 to others. Overpriced at \$10.

New International Year Book (Funk and Wagnalls Co., N.Y.C.) \$6.25 to purchasers of the encyclopedia; \$11.50 to others.

The New Standard Encyclopedia Year Book (Funk and Wagnalls Co.) \$1. Based on the *New International Year Book*. New and accurate.

The Statesman's Year Book (Macmillan & Co., London) 20 shillings (about \$4).

World Almanac (World-Telegram, N.Y.C.) 60c. Accurate and complete; factual material strictly up to date.

B. Intermediate

The National Year Book (P. F. Collier & Son Corp., N.Y.C.) \$5.65 to purchasers of the encyclopedia; \$7.50 to others.

Children's Encyclopedias

More and more the tendency in modern education is to stimulate the pupil to seek out information for himself, rather than to memorize a rigid text. By this method of teaching, the pupil uses reference books and books of a more general character than a textbook. To meet this situation, a number of publishers are putting out encyclopedias adapted in style and choice of material for children.

These books are largely sold through agents, frequently through agents who are teaching in local schools—a combination difficult for a parent to resist, especially when the teacher-agent suggests that they are necessary for Johnny's school work.

Educationally, little can be said for these books. The sending of grade-school children to such works to dig out information is of questionable value; the usual textbook is ample source for them. High school students will receive better training for their future responsibilities in office, factory, or the professions if they are sent directly to the adult encyclopedias for reference material. They will have no difficulty in using them after a little preliminary training.

The best juvenile encyclopedias are recommended to libraries and to families that can easily afford two encyclopedias. They are not indispensable reference books. The family that can afford only one encyclopedia should by all means buy one of those rated A or B in the preceding lists.

A. Recommended

Compton's Pictured Encyclopedia (F. E. Compton & Co., Chicago) 15 vols. 1939. \$64.90.

World Book Encyclopedia (The Quarrie Corp., Chicago) 19 vols. Revised January 1940. \$72.

A. Recommended (contd.)

(There is little choice between these two works. They differ in method: *Compton's* uses the long article with specific facts located by index; *World Book* uses short articles, breaking up fields of knowledge, and contains more illustrations and maps. Both are authoritative.)

B. Intermediate

Britannica Junior (Encyclopaedia Britannica, Inc., Chicago) 12 vols. 1939. \$49.90. The 1939 revision of this work shows improvement over the earlier revisions. Unfortunately, the work originally incorporated much material from the *Weedon's Modern Encyclopedia* (1931) which Britannica purchased. Much of the material needed to be rewritten to bring it up to date and to make the style conform to that of the new material. This has not yet been completely done.

Lincoln Library of Essential Information (See listing under "One-Volume Encyclopedias.")

New Champlin Cyclopaedia for Young Folks (P. F. Collier & Son, N.Y.C.) 12 vols. \$35.55. Same work (Holt, N.Y.C.), 6 vols., \$28 (trade edition). Each volume of this is more or less complete in itself; e.g., vol. 3 contains literature, art, and mythology. More like a series of textbooks than an encyclopedia. The format does not reflect as large a difference in price as actually exists between the two editions.

The Wonderland of Knowledge (Publishers Productions, Inc., Chicago) 15 vols. \$29.75. Limited in scope; inadequate except for those who desire an inexpensive set for home use, where close knowledge of details is not a desideratum.

Religious Encyclopedias

There are many religious encyclopedias available, but we have space to describe briefly only a few of the best in this field.

Catholic Encyclopedia (Gilmary Society, Inc., 226 E. Fordham Road, N.Y.C.) 16 vols. \$6.50 each, or \$100 the set. This is a complete revision of the older *Catholic Encyclopedia*. Its scope has been broadened by the addition of articles in general fields of economics, sociology, ethics, etc., and by omitting discussion of obscure and highly technical church matters. The book seems to this reviewer less useful than before, for it is neither a good general encyclopedia nor a complete reference book of Catholic matters.

The Encyclopedia of Jewish Knowledge (Behrman's Jewish Book House, N.Y.C.) 1 vol. \$5. This work, which brings up to date *The Jewish Encyclopedia* (Funk and Wagnalls Co.), is the best compendium of accurate information about the Jewish people, their culture, religion, history, etc.

Encyclopedia of Religion and Ethics, edited by James Hastings (Scribner's, N.Y.C.) 12 vols. \$96; thin paper edition, 7 vols., \$65.

New Schaff-Herzog Encyclopedia of Religious Knowledge (Funk and Wagnalls Co.) 13 vols. \$72. This is an excellent encyclopedia and is unbiased, scholarly, and complete. Appended to each article are excellent bibliographies.

Off the Editor's Chest

(Continued from page 1)

the AAA tried that but failed so completely that the scheme was soon abandoned.

Sponsors of the bill argue that the spread between the price of milk to the producer and the price to the consumer is too broad. In that case, there are ways to reduce it, including the launching of producer-controlled co-operatives, without repealing the State anti-trust laws and setting up barriers against the importation of cheaper milk from other states.

Not only is the object of this bill bad, but even if it were good, this measure would not be a fit vehicle for accomplishing it. Consumers should be quick to see the danger signal whenever price-fixing legislation is proposed. Disguised as a protection for the producer or distributor, the real object is to plunder the consumer.

We are happy to add that the sequel to this editorial is an encouraging one: According to a news item in the *Post-Dispatch* bearing the date line "Jefferson City, Feb. 17," the milk control bill referred to in the editorial quoted above was killed by the (Missouri) House Committee on Agriculture, which voted 23 to 2 to report it unfavorably. This may be taken to indicate that even legislators, after an unavoidable delay permitting them to sense the public temper on the question, are following the trend already noted as to the academic economists, and have begun to give up the hope of devising workable economic measures for bringing back prosperity by the boot-strap-lifting technique so extensively fostered in the last decade by the hundreds of federal and state government agencies.

A number of other states would not be in the legal and economic confusion as to problems of milk marketing in which they now find themselves had they not thought that a producer's millennium could be brought about by a group of men (necessarily *supermen* in character, responsibility, and impartiality) designated to decide what price was fair for milk and what producers and dealers should be penalized or sentenced to economic death for disagreeing with these supermen's judgment of the market and of what the traffic will bear.

In one great city in the Middle West, grand jury indictments have been handed down charging an alliance of the most pernicious character between public health officials, corporation and trade association heads, and trade union leaders, this price-fixing alliance involving use of the city's regulatory powers (granted under health ordinances) as devices for punishing and penalizing dealers who refused to sell milk and ice cream at the high and fixed prices imposed and preferred by the leaders of the industry. It is not uncommon to find health control regulations in their various complex forms used as price-fixing devices, the reason being that legal and administrative actions designed to control or advance the public health permit a much stronger exercise of power by public officials than almost any other type of public or policing control, and an exercise of power only in rare instances restrained by the courts. It has been particularly convenient, therefore, in milk price-fixing and quality and grade limitation, for public officials to be able to hide behind a smoke screen of concern for the public welfare, and city and state boards of health and other regulatory officials have very frequently acted directly counter to the public interest and made price-raising and price-stabilizing (with holding down of quality) their main concerns, while giving only trifling or minor attention to

guaranteeing in fact the quality, purity, and sanitary condition of the product. In some states, those attempting control of this type have not concerned themselves exclusively with such essential foodstuffs as milk, but have extended their scope even to attempts to prevent dealers from entering the automobile business except upon formal grant of permission by a state agency, after a decision by that agency that the prospective dealer is the right sort of person, with the proper attitudes, keeping the right sort of accounts and records, to be admitted to the sacred company of the other dealers and their governing commission. (A commission which, if it is to function in the interest of the public, *must* be composed exclusively and necessarily of

selfless and farseeing supermen who are wiser on matters affecting the public interest and more farseeing than any of the other dealers in the industry.)

Control boards and their personnel naturally relish holding the power to reach out and dominate the daily life and conduct of their fellows, their competitors, and the public at large. ¶To return to the Missouri legislators, we believe they have signalized a trend which is gaining ground in all circles but those of the left. This trend is away from leaving decisions as to the personal economic destinies of producers and consumers in the hands of other persons—who, in turn, have their own economic interests to serve. *** Such interests are always present, whether overt or concealed.

Chalks, Art Colors, and Paints

READERS of CR's *Bulletins* will recall that a number of well-known brands of colored chalk were found to contain lead and to constitute a serious health hazard to school children (see CR's Apr. '39, Jan. '40, June '40 *Bulletins*). The findings aroused considerable interest on the part of both manufacturers and public health authorities. A number of manufacturers then promptly took steps to reduce the hazard by eliminating the use of dangerous pigments. We are glad to report that the Industrial Hygiene Laboratory of the California State Department of Public Health has now analysed a considerable number of brands of school chalks, crayons, paints, and colors. The products were submitted for test by the manufacturers and, of course, do not include all of the non-poisonous chalks, crayons, paints, and colors available on the market. Those which were found to contain no lead, mercury, or arsenic are listed here for the convenience of our subscribers and are rated *B. Intermediate* by CR.

B. Intermediate

American Art Clay Co., Indianapolis, Indiana
Amaco Wax Crayons, Hexagon, No. H-724
Amaco Dustless Colored Chalks, 324
 The American Crayon Co., Sandusky, Ohio
Ambrite Colored Chalks, 510
Crayograph Drawing Crayons, 1028, Prang
Crayonex Wax Crayon, 326
Freeart Forsyte Sight Conservation Mediums
Hygeia Sight Conservation Mediums
Kindograph Drawing Crayons, 934
New Poster Pastello Colored Chalk Crayons, 1057
Payon Painting Crayons, 343
Poster Pastello Colored Chalks, 1056
Wallham Sight Conservation Mediums
 Art Crayon Co., Brooklyn, New York
Sargent Colored School Pastel Crayons, 6012
Sargent Hexagon Crayons, 5116
 Binney & Smith Co., New York City
An-du-Septic Yellow Sight Saver Crayons
Atlantic Yellow Sight Saver Chalk Crayons
 Chalk Crayons, 406
 Milton Bradley Co., Springfield, Massachusetts
Art Colors
B-1 Paint Set
Crayons No. 1 Embeco, 8100
Crayons No. 16 Embeco, 8233
Crayons Tru-Tone, 8228
 Standard Colored Crayons, 8354
Tru-Hue Powdered Poster Colors

Standard Crayon Manufacturing Co., Danvers, Massachusetts
Atlas White Dustless Chalks, 95%
Omega Dustless Yellow Sight Saver Chalks, 50%
Omega White Dustless Chalks, 50%
Poster Chalks, assortments, 67 and 68
Red Seal Colored Chalks, 1 and 2 grades
 Standard White Chalks
 Standard Yellow Enamel Chalks
 Standard Yellow Sight Saver Chalks
 Weber Costello Co., Chicago Heights, Illinois
Alpha Color Colored Chalks
Alpha Dustless White Chalk
Alphasile Sight Saving Chalks
Webco Dustless White Chalk
 * * *

Yellow crayons not included in the above list but previously tested by CR for lead and found satisfactory:

Bradley's Sight-Saving Dustless (Milton Bradley Co.)
Hygeia Forsyte (For-Sight) Dustless Crayons (The American Crayon Co.)

In addition the following, tested by CR, were rated:

C. Not Recommended

Kroma Chalk Crayon, No. 12 (The American Crayon Co.; sold by chain stores) Colored assortment.
Sun-Ray Colored Chalk, No. 472 (American Art Clay Co.) Colored assortment.

A Bibliography of Books on Consumption, 1930-1940—Special Bulletin 28. This is a non-confidential issue, which we believe will be of special interest and value to all teachers and students of consumption economics and "consumer problems." Following an introductory discussion of some general questions relating to bibliography of literature in the consumer field, the bibliography provides lists of general textbooks for high schools and colleges, and supplementary books of direct consumer interest on such topics as "buymanship," consumer credit, consumer cooperation, population problems, budgeting, health and the consumer, consumers and the social order, wealth and income, and other subjects.

CR will be glad at this time to receive orders from teachers and others for this bibliography, soon to be available in mimeographed form at 20c the copy.